

SEQUENCE LISTING

<110> Tang, Y. Tom
 Liu, Chenghua
 Zhou, Ping
 Asundi, Vinod
 Zhang, Jie
 Zhao, Qing A.
 Ren, Feiyan
 Xue, Aidong J.
 Yang, Yonghong
 Wehrman, Tom
 Drmanac, Radoje T.

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| cag | gtg | acc | gtg | gca | gcc | tcg | tcc | ccg | cca | gcg | gtc | ccc | tcc | cac | agc | 741 |
| Gln | Val | Thr | Val | Ala | Ala | Ser | Ser | Pro | Pro | Ala | Val | Pro | Ser | His | Ser | |
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| Met | Val | Gly | Ile | Thr | Met | Asp | Val | Gly | Gly | Ser | Pro | Ile | Val | Ser | Ser | |
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| gcg | gga | gcc | tat | ctc | atc | cac | ggg | ggg | atg | gac | agc | acc | aga | cac | tcc | 837 |
| Ala | Gly | Ala | Tyr | Leu | Ile | His | Gly | Gly | Met | Asp | Ser | Thr | Arg | His | Ser | |
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| Leu | Ala | His | Thr | Ser | Arg | Ser | Ser | Pro | Ala | Thr | Leu | Glu | Met | Ala | Ile | |
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| Glu | Asn | Leu | Gln | Lys | Ser | Glu | Gly | Ile | Thr | Ser | His | Lys | Ser | Gly | Leu | |
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| Leu | Asn | Ser | His | Leu | Gln | Trp | Leu | Leu | Asp | Asn | Tyr | Glu | Thr | Ala | Glu | |
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| Gly | Val | Ser | Leu | Pro | Arg | Ser | Ser | Leu | Tyr | Asn | His | Tyr | Leu | Arg | His | |
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| Leu | Ile | Arg | Ser | Val | Phe | Met | Gly | Leu | Arg | Thr | Arg | Arg | Leu | Gly | Thr | |
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| aac Asn | gtg Val | cag Gln 550 | gag Glu | cag Gln | gcc Ala | tcg Ser | tgg Trp 555 | gtg Val | tgc Cys | cag Gln | tgc Cys | gag Glu 560 | gag Glu | agt Ser | gtg Val | 2037 | | | |
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| acc Thr | ctg Leu | cgc Arg 630 | agc Ser | gct Ala | gcc Ala | agc Ser | ttc Phe 635 | ggc Gly | tcc Ser | ttc Phe | cac His | ctc Leu 640 | atc Ile | cgc Arg | ctg Leu | 2277 | | | |
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Met Glu Ser Gly Arg Gly Ser Ser
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acc cct cca gga ccc att gct gcc cta ggg atg cca gac act ggg cct 639
Thr Pro Pro Gly Pro Ile Ala Ala Leu Gly Met Pro Asp Thr Gly Pro
10 15 20
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Gly Ser Ser Ser Leu Gly Lys Leu Gln Ala Leu Pro Val Gly Pro Arg
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gcc cac tgt ggg gac cct gtc agc ctg gct gca gca ggg gac ggc tct 735
Ala His Cys Gly Asp Pro Val Ser Leu Ala Ala Ala Gly Asp Gly Ser
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cca gac ata ggc ccc acg gga gag ctg agt ggt agc tta aag atc ccc 783
Pro Asp Ile Gly Pro Thr Gly Glu Leu Ser Gly Ser Leu Lys Ile Pro
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Asn Arg Asp Ser Gly Ile Asp Ser Pro Ser Ser Ser Val Ala Gly Glu
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Leu Gly Ala His Ala Glu Met Ala Leu Asp Ser Gln Val Pro Lys Val
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Thr Pro Gln Glu Glu Ala Asp Ser Asp Val Gly Glu Glu Pro Asp Ser
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Glu Asn Thr Pro Gln Lys Ala Asp Lys Asp Ala Gly Leu Ala Gln His

| 140 | | | | | | | 145 | | | | | 150 | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--|
| tct | ggc | ccc | cag | aag | ctt | ctc | cac | att | gcc | cag | gag | ctc | ctg | cac | acc | 1071 | |
| Ser | Gly | Pro | Gln | Lys | Leu | Leu | His | Ile | Ala | Gln | Glu | Leu | Leu | His | Thr | | |
| | | 155 | | | | | 160 | | | | | 165 | | | | | |
| gag | gag | acc | tat | gtg | aag | cgg | ctg | cac | ctg | ctg | gac | cag | gtt | ttc | tgc | 1119 | |
| Glu | Glu | Thr | Tyr | Val | Lys | Arg | Leu | His | Leu | Leu | Asp | Gln | Val | Phe | Cys | | |
| | | 170 | | | | 175 | | | | | 180 | | | | | | |
| acc | agg | ctg | acg | gat | gcg | ggg | atc | cct | cca | gaa | gtc | atc | atg | ggc | ata | 1167 | |
| Thr | Arg | Leu | Thr | Asp | Ala | Gly | Ile | Pro | Pro | Glu | Val | Ile | Met | Gly | Ile | | |
| 185 | | | | | 190 | | | | | 195 | | | | | 200 | | |
| ttc | tct | aac | atc | tcc | tcc | atc | cac | cgc | ttc | cac | ggg | cag | ttc | ctg | ctg | 1215 | |
| Phe | Ser | Asn | Ile | Ser | Ser | Ile | His | Arg | Phe | His | Gly | Gln | Phe | Leu | Leu | | |
| | | | | 205 | | | | | 210 | | | | | 215 | | | |
| ccg | gag | ctg | aag | acg | cgg | atc | acg | gag | gag | tgg | gac | aca | aac | cca | cgg | 1263 | |
| Pro | Glu | Leu | Lys | Thr | Arg | Ile | Thr | Glu | Glu | Trp | Asp | Thr | Asn | Pro | Arg | | |
| | | | 220 | | | | | 225 | | | | | 230 | | | | |
| ctc | ggg | gac | atc | ctg | cag | aag | ctg | gcc | cca | ttc | ctg | aag | atg | tac | ggc | 1311 | |
| Leu | Gly | Asp | Ile | Leu | Gln | Lys | Leu | Ala | Pro | Phe | Leu | Lys | Met | Tyr | Gly | | |
| | | 235 | | | | | 240 | | | | | 245 | | | | | |
| gag | tat | gtc | aag | aac | ttt | gac | cga | gcc | gta | ggg | ctg | gtg | agc | acg | tgg | 1359 | |
| Glu | Tyr | Val | Lys | Asn | Phe | Asp | Arg | Ala | Val | Gly | Leu | Val | Ser | Thr | Trp | | |
| | | 250 | | | | 255 | | | | | 260 | | | | | | |
| acc | cag | cgc | tcc | cca | ctg | ttt | aaa | gac | gtc | gtc | cac | agc | atc | cag | aag | 1407 | |
| Thr | Gln | Arg | Ser | Pro | Leu | Phe | Lys | Asp | Val | Val | His | Ser | Ile | Gln | Lys | | |
| 265 | | | | | 270 | | | | 275 | | | | | | 280 | | |
| cag | gag | gta | tgc | ggg | aac | ctg | acg | ctg | cag | cac | cac | atg | ctg | gag | ccc | 1455 | |
| Gln | Glu | Val | Cys | Gly | Asn | Leu | Thr | Leu | Gln | His | His | Met | Leu | Glu | Pro | | |
| | | | | 285 | | | | | 290 | | | | | 295 | | | |
| gtg | cag | agg | gtc | ccc | cgg | tac | gag | ctg | ctg | ctc | aag | gac | tat | ctg | aag | 1503 | |
| Val | Gln | Arg | Val | Pro | Arg | Tyr | Glu | Leu | Leu | Leu | Lys | Asp | Tyr | Leu | Lys | | |
| | | | 300 | | | | | 305 | | | | | 310 | | | | |
| agg | ctc | ccg | cag | gac | gcc | cca | gac | cgg | aag | gat | gcg | gag | agg | tcc | ttg | 1551 | |
| Arg | Leu | Pro | Gln | Asp | Ala | Pro | Asp | Arg | Lys | Asp | Ala | Glu | Arg | Ser | Leu | | |
| | | 315 | | | | | 320 | | | | | 325 | | | | | |
| gag | ctc | atc | tcc | aca | gcc | gcc | aac | cac | tcc | aat | gct | gcc | att | cgg | aaa | 1599 | |
| Glu | Leu | Ile | Ser | Thr | Ala | Ala | Asn | His | Ser | Asn | Ala | Ala | Ile | Arg | Lys | | |
| | | 330 | | | | 335 | | | | | 340 | | | | | | |
| gtg | gag | aaa | atg | cac | aag | ctc | ttg | gag | gtg | tac | gag | cag | ctg | ggt | ggg | 1647 | |
| Val | Glu | Lys | Met | His | Lys | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|
| atc Ile | cag Gln | aaa Lys | ctg Leu 380 | tca Ser | gcc Ala | aag Lys | aac Asn | ggc Gly 385 | acc Thr | ccc Pro | cag Gln | gac Asp | cgc Arg 390 | cac His | ctc Leu | 1743 |
| ttc Phe | ctg Leu | ttc Phe 395 | aac Asn | agc Ser | atg Met | atc Ile | ctt Leu 400 | tac Tyr | tgt Cys | gtg Val | ccc Pro 405 | aag Lys | ctg Leu | cgg Arg | ctc Leu | 1791 |
| atg Met | ggc Gly 410 | cag Gln | aag Lys | ttc Phe | agc Ser | gtc Val 415 | cgg Arg | gag Glu | aag Lys | atg Met | gac Asp 420 | atc Ile | tca Ser | ggc Gly | ctc Leu | 1839 |
| cag Gln 425 | gtg Val | cag Gln | gat Asp | atc Ile | gtc Val 430 | aag Lys | cca Pro | aac Asn | aca Thr | gca Ala 435 | cat His | aca Thr | ttc Phe | atc Ile | ata Ile 440 | 1887 |
| acg Thr | gga Gly | aga Arg | aaa Lys | agg Arg 445 | tcc Ser | ctg Leu | gag Glu | ctg Leu | cag Gln 450 | acg Thr | cgg Arg | aca Thr | gag Glu 455 | gaa Glu | gag Glu | 1935 |
| aag Lys | aaa Lys | gaa Glu | tgg Trp 460 | att Ile | cag Gln | atc Ile | atc Ile | cag Gln 465 | gcc Ala | acc Thr | atc Ile | gag Glu 470 | aag Lys | cac His | aaa Lys | 1983 |
| cag Gln | aac Asn | agc Ser 475 | gaa Glu | acc Thr | ttc Phe | aag Lys | gct Ala 480 | ttt Phe | ggg Gly | ggc Gly | gcc Ala | ttc Phe 485 | agc Ser | cag Gln | gat Asp | 2031 |
| gag Glu 490 | gac Asp | ccc Pro | agc Ser | ctc Leu | tct Ser | cca Pro 495 | gac Asp | atg Met | cct Pro | atc Ile | acg Thr 500 | agc Ser | acc Thr | agc Ser | cct Pro | 2079 |
| gtg Val 505 | gag Glu | cct Pro | gtg Val | gtg Val | acc Thr 510 | acc Thr | gaa Glu | ggc Gly | agt Ser | tgc Ser 515 | ggg Gly | gca Ala | gca Ala | ggg Gly | ctc Leu 520 | 2127 |
| gag Glu | ccc Pro | aga Arg | aaa Lys | cta Leu 525 | tcc Ser | tct Ser | aag Lys | acc Thr | aga Arg 530 | cgt Arg | gac Asp | aag Lys | gag Glu | aag Lys 535 | cag Gln | 2175 |
| agc Ser | tgt Cys | aag Lys | agc Ser | tgt Cys | ggg Gly | gag Glu | acc Thr | ttc Phe | aac Asn | tcc Ser | atc Ile | acc Thr | aag Lys 550 | agg Arg | agg Arg | 2223 |
| cat His | cac His | tgc Cys 555 | aag Lys | ctg Leu | tgt Cys | ggg Gly | gcg Ala 560 | gtc Val | atc Ile | tgt Cys | ggg Gly | aag Lys 565 | tgc Cys | tcc Ser | gag Glu | 2271 |
| ttc Phe | aag Lys 570 | gcc Ala | gag Glu | aac Asn | agc Ser | cgg Arg 575 | cag Gln | agc Ser | cgt Arg | gtc Val | tgc Cys 580 | aga Arg | gat Asp | tgt Cys | ttc Phe | 2319 |
| ctg Leu 585 | aca Thr | cag Gln | cca Pro | gtg Val | gcc Ala 590 | cct Pro | gag Glu | agc Ser | aca Thr | gag Glu 595 | aag Lys | aca Thr | ccc Pro | act Thr | gca Ala 600 | 2367 |

| | |
|---|------|
| gac ccc cag ccc agc ctg ctc tgc ggc ccc ctg cgg ctg tca gag agc Asp Pro Gln Pro Ser Leu Leu Cys Gly Pro Leu Arg Leu Ser Glu Ser 605 610 615 | 2415 |
| gga gag acc tgg agc gag gtg tgg gcc gcc atc ccc atg tca gat ccc Gly Glu Thr Trp Ser Glu Val Trp Ala Ala Ile Pro Met Ser Asp Pro 620 625 630 | 2463 |
| cag gtg ctg cac ctg cag gga ggc agc cag gac ggc cgg ctg ccc cgc Gln Val Leu His Leu Gln Gly Gly Ser Gln Asp Gly Arg Leu Pro Arg 635 640 645 | 2511 |
| acc atc cct ctc ccc agc tgc aaa ctg agt gtg ccg gac cct gag gag Thr Ile Pro Leu Pro Ser Cys Lys Leu Ser Val Pro Asp Pro Glu Glu 650 655 660 | 2559 |
| agg ctg gac tgc ggg cat gtg tgg aag ctg cag tgg gcc aag cag tcc Arg Leu Asp Ser Gly His Val Trp Lys Leu Gln Trp Ala Lys Gln Ser 665 670 675 680 | 2607 |
| tgg tac ctg agc gcc tcc tcc gca gag ctg cag cag cag tgg ctg gaa Trp Tyr Leu Ser Ala Ser Ser Ala Glu Leu Gln Gln Gln Trp Leu Glu 685 690 695 | 2655 |
| acc cta agc act gct gcc cat ggg gac acg gcc cag gac agc ccg ggg Thr Leu Ser Thr Ala Ala His Gly Asp Thr Ala Gln Asp Ser Pro Gly 700 705 710 | 2703 |
| gcc ctg cag ctt cag gtc cct atg ggc gca gct gct ccg tga gctgagt Ala Leu Gln Leu Gln Val Pro Met Gly Ala Ala Ala Pro * 715 720 725 | 2752 |
| ctccccactgc cctgcacacc accacattgg acctgtgctg tccctgggagg tgggtgttga | 2812 |
| ggccccatga agagcgccct ggactgctga ggggtgggcca acagcccaga gctcaggaca | 2872 |
| tttggctttg gggggaagga aactgaggcc cagagagggg caaccactgg ccaaggggtca | 2932 |
| cccagcaagt tttggctaag agcctggcct ccagccccag cagtgtggcc cagagcaggg | 2992 |
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| agaaagaggg agcatgggca ctgccaggga cagccacatc ctgctgggtct gcagcgtggg | 3112 |
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| ttcgtccgac | tactgtactc | ccaggcagaa | acccacggct | gaagcccacg | atgcccattgt | 120 |
| gtaacttggt | tattacacac | acgtttggag | cccagtgtgc | agaccgcag | cgcagaggag | 180 |
| gcggcggaac | accccggtt | ggtcgggtt | ccaagggctg | acccgagctc | cagcactttt | 240 |
| tccgcgcctg | atttttcaga | gctcttcaga | aaccaggctg | ctttcaggaa | cattgctgtg | 300 |
| gattcccagg gcctattcca ctagaagcaa g atg gct gaa ctc aat act cat | | | | | | 352 |
| Met Ala Glu Leu Asn Thr His | | | | | | |
| 1 5 | | | | | | |
| gtg aat gtc aag gaa aag atc tat gca gtt aga tca gtt gtt ccc aac | 400 | | | | | |
| Val Asn Val Lys Glu Lys Ile Tyr Ala Val Arg Ser Val Val Pro Asn | | | | | | |
| 10 15 20 | | | | | | |
| aaa agc aat aat gaa ata gtc ctg gtg ctc caa cag ttt gat ttt aat | 448 | | | | | |
| Lys Ser Asn Asn Glu Ile Val Leu Val Leu Gln Gln Phe Asp Phe Asn | | | | | | |
| 25 30 35 | | | | | | |
| gtg gat aaa gcc gtg caa gcc ttt gtg gat ggc agt gca att caa gtt | 496 | | | | | |
| Val Asp Lys Ala Val Gln Ala Phe Val Asp Gly Ser Ala Ile Gln Val | | | | | | |
| 40 45 50 55 | | | | | | |
| cta aaa gaa tgg aat atg aca gga aaa aag aag aac aat aaa aga aaa | 544 | | | | | |
| Leu Lys Glu Trp Asn Met Thr Gly Lys Lys Lys Asn Asn Lys Arg Lys | | | | | | |
| 60 65 70 | | | | | | |
| aga agc aag tcc aag cag cat caa ggc aac aaa gat gct aaa gac aag | 592 | | | | | |
| Arg Ser Lys Ser Lys Gln His Gln Gly Asn Lys Asp Ala Lys Asp Lys | | | | | | |
| 75 80 85 | | | | | | |
| gtg gag agg cct gag gca ggg ccc ctg cag ccg cag cca cca cag att | 640 | | | | | |
| Val Glu Arg Pro Glu Ala Gly Pro Leu Gln Pro Gln Pro Pro Gln Ile | | | | | | |
| 90 95 100 | | | | | | |
| caa aac ggc ccc atg aat ggc tgc gag aag gac agc tcg tcc aca gat | 688 | | | | | |
| Gln Asn Gly Pro Met Asn Gly Cys Glu Lys Asp Ser Ser Ser Thr Asp | | | | | | |
| 105 110 115 | | | | | | |
| tct gct aac gaa aaa cca gcc ctt atc cct cgt gag aaa aag atc tcg | 736 | | | | | |
| Ser Ala Asn Glu Lys Pro Ala Leu Ile Pro Arg Glu Lys Lys Ile Ser | | | | | | |
| 120 125 130 135 | | | | | | |
| ata ctt gag gaa cct tca aag gca ctt cgt ggg gtc aca gaa ggc aac | 784 | | | | | |
| Ile Leu Glu Glu Pro Ser Lys Ala Leu Arg Gly Val Thr Glu Gly Asn | | | | | | |
| 140 145 150 | | | | | | |

| | |
|---|------|
| aga cta ctg caa cag aaa cta tcc tta gat ggg aac ccc aaa cct ata | 832 |
| Arg Leu Leu Gln Gln Lys Leu Ser Leu Asp Gly Asn Pro Lys Pro Ile | |
| 155 160 165 | |
| cat gga aca aca gag agg tca gat ggc cta cag tgg tca gct gag cag | 880 |
| His Gly Thr Thr Glu Arg Ser Asp Gly Leu Gln Trp Ser Ala Glu Gln | |
| 170 175 180 | |
| cct tgt aac cca agc aag cct aag gca aaa aca tct cct gtt aag tcc | 928 |
| Pro Cys Asn Pro Ser Lys Pro Lys Ala Lys Thr Ser Pro Val Lys Ser | |
| 185 190 195 | |
| aat acc cct gca gct cat ctt gaa ata aag cca gat gag ttg gca aag | 976 |
| Asn Thr Pro Ala Ala His Leu Glu Ile Lys Pro Asp Glu Leu Ala Lys | |
| 200 205 210 215 | |
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| Lys Arg Gly Pro Asn Ile Glu Lys Ser Val Lys Asp Leu Gln Arg Cys | |
| 220 225 230 | |
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| Thr Val Ser Leu Thr Arg Tyr Arg Val Met Ile Lys Glu Val Asp | |
| 235 240 245 | |
| agt tcc gtg aag aag atc aaa gct gcc ttt gct gaa tta cac aac tgc | 1120 |
| Ser Ser Val Lys Lys Ile Lys Ala Ala Phe Ala Glu Leu His Asn Cys | |
| 250 255 260 | |
| atc att gac aaa gaa gtt tca tta atg gca gaa atg gat aaa gtt aaa | 1168 |
| Ile Ile Asp Lys Glu Val Ser Leu Met Ala Glu Met Asp Lys Val Lys | |
| 265 270 275 | |
| gaa gaa gcc atg gaa atc ctg act gct cgt cag aag aaa gca gaa gaa | 1216 |
| Glu Glu Ala Met Glu Ile Leu Thr Ala Arg Gln Lys Lys Ala Glu Glu | |
| 280 285 290 295 | |
| cta aag aga ctc act gac ctt gcc agt cag atg gca gag atg cag ctg | 1264 |
| Leu Lys Arg Leu Thr Asp Leu Ala Ser Gln Met Ala Glu Met Gln Leu | |
| 300 305 310 | |
| gcc gaa ctc agg gca gaa att aag cac ttt gtc agc gag cgt aaa tat | 1312 |
| Ala Glu Leu Arg Ala Glu Ile Lys His Phe Val Ser Glu Arg Lys Tyr | |
| 315 320 325 | |
| gac gag gag ctc ggg aaa gct gcc cgg ttt tcc tgt gac atc gaa cag | 1360 |
| Asp Glu Glu Leu Gly Lys Ala Ala Arg Phe Ser Cys Asp Ile Glu Gln | |
| 330 335 340 | |
| ctg aag gcc caa atc atg ctc tgc gga gaa att aca cat cca aag aac | 1408 |
| Leu Lys Ala Gln Ile Met Leu Cys Gly Glu Ile Thr His Pro Lys Asn | |
| 345 350 355 | |
| aac tat tcc tca aga act ccc tgc agc tcc ctg ctg cct ctg ctg aat | 1456 |
| Asn Tyr Ser Ser Arg Thr Pro Cys Ser Ser Leu Leu Pro Leu Leu Asn | |
| 360 365 370 375 | |

| | | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|------------------------------|-----|-----|-----|-----|-----|---------|------|-----|
| cgc | cac | gca | gca | acc | tct | ggg | aaa | cag | agt | aac | ttt | tcc | cga | aaatca | | |
| Ala | His | Ala | Ala | Thr | Ser | Gly | Lys | Gln | Ser | Asn | Phe | Ser | Arg | Lys Ser | | |
| | | | | 380 | | | | | | | 385 | | | | | 390 |
| tcc | act | cac | aat | aag | ccc | tct | gaa | ggc | aaa | gcg | gca | aac | ccc | aaa atg | | |
| Ser | Thr | His | Asn | Lys | Pro | Ser | Glu | Gly | Lys | Ala | Ala | Asn | Pro | Lys Met | | |
| | | | | 395 | | | | | | | 400 | | | | | 405 |
| gtg | agc | agt | ctc | ccc | agc | acc | gcc | gac | ccc | tct | cac | cag | acc | atg ccg | | |
| Val | Ser | Ser | Leu | Pro | Ser | Thr | Ala | Asp | Pro | Ser | His | Gln | Thr | Met Pro | | |
| | | | | 410 | | | | | | | 415 | | | | | 420 |
| gcc | aac | aag | cag | aat | gga | tct | tct | aac | caa | aga | cgg | aga | ttt | aat cca | | |
| Ala | Asn | Lys | Gln | Asn | Gly | Ser | Ser | Asn | Gln | Arg | Arg | Arg | Phe | Asn Pro | | |
| | | | | 425 | | | | | | | 430 | | | | | 435 |
| cag | tat | cat | aac | aac | agg | cta | aat | ggg | cct | gcc | aag | tcg | cag | ggc agt | | |
| Gln | Tyr | His | Asn | Asn | Arg | Leu | Asn | Gly | Pro | Ala | Lys | Ser | Gln | Gly Ser | | |
| | | | | 440 | | | | | | | 445 | | | | | 450 |
| ggg | aat | gaa | gcc | gag | cca | ctg | gga | aag | ggc | aac | agc | cgc | cac | gaa cac | | |
| Gly | Asn | Glu | Ala | Glu | Pro | Leu | Gly | Lys | Gly | Asn | Ser | Arg | His | Glu His | | |
| | | | | 460 | | | | | | | 465 | | | | | 470 |
| aga | aga | cag | ccg | cac | aac | ggc | ttc | cgg | ccc | aaa | aac | aaa | ggc | ggt gcc | | |
| Arg | Arg | Gln | Pro | His | Asn | Gly | Phe | Arg | Pro | Lys | Asn | Lys | Gly | Gly Ala | | |
| | | | | 475 | | | | | | | 480 | | | | | 485 |
| aaa | aat | caa | gag | gct | tcc | ttg | ggg | atg | aag | acc | ccc | gag | gcc | ccg gcc | | |
| Lys | Asn | Gln | Glu | Ala | Ser | Leu | Gly | Met | Lys | Thr | Pro | Glu | Ala | Pro Ala | | |
| | | | | 490 | | | | | | | 495 | | | | | 500 |
| cat | tct | gaa | aag | ccc | cgg | cga | agg | cag | cac | gct | gca | gac | acc | tcg gag | | |
| His | Ser | Glu | Lys | Pro | Arg | Arg | Arg | Gln | His | Ala | Ala | Asp | Thr | Ser Glu | | |
| | | | | 505 | | | | | | | 510 | | | | | 515 |
| gcc | agg | ccc | ttc | cgg | ggt | agt | gtc | ggt | agg | gtt | tca | cag | tgc | aat etc | | |
| Ala | Arg | Pro | Phe | Arg | Gly | Ser | Val | Gly | Arg | Val | Ser | Gln | Cys | Asn Leu | | |
| | | | | 520 | | | | | | | 525 | | | | | 530 |
| tgc | ccc | acg | aga | ata | gaa | gtt | tcc | aca | gat | gca | gca | gtt | ctc | tca gtc | | |
| Cys | Pro | Thr | Arg | Ile | Glu | Val | Ser | Thr | Asp | Ala | Ala | Val | Leu | Ser Val | | |
| | | | | 540 | | | | | | | 545 | | | | | 550 |
| ccg | gct | gtg | acg | ttg | gtg | gcc | tga | gctaggagga aaaagagcag ttttca | | | | | | | 2038 | |
| Pro | Ala | Val | Thr | Leu | Val | Ala | * | | | | | | | | | |
| | | | | 555 | | | | | | | | | | | | |
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| | | | | | | |
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| tgctgaggac | acatgcgctt | ttgtagaatt | taacatctgg | tgtttttctg | aaaaaatata | 2458 |
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| | | | | | | | | | | | | | | | | | | | |
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| gcggcggaac | accccggtt | ggtcgggttt | ccaagggctg | acccgagctc | cagcactttt | | | | | | | | | | | | | | 240 |
| tccgcgctg | atttttcaga | gctcttcaga | aaccaggctg | ctttcaggaa | cattgctgtg | | | | | | | | | | | | | | 300 |
| gattcccagg | gcctattcca | ctagaagcaa | g | atg gct gaa ctc aat act cat | | | | | | | | | | | | | | | 352 |
| | | | | Met Ala Glu Leu Asn Thr His | | | | | | | | | | | | | | | |
| | | | | 1 | 5 | | | | | | | | | | | | | | |
| gtg aat gtc aag gaa aag atc tat gca gtt aga tca gtt gtt ccc aac | | | | | | | | | | | | | | | | | | | 400 |
| Val Asn Val Lys Glu Lys Ile Tyr Ala Val Arg Ser Val Val Pro Asn | | | | | | | | | | | | | | | | | | | |
| | 10 | | | | | | 15 | | | | | 20 | | | | | | | |
| aaa agc aat aat gaa ata gtc ctg gtg ctc caa cag ttt gat ttt aat | | | | | | | | | | | | | | | | | | | 448 |
| Lys Ser Asn Asn Glu Ile Val Leu Val Leu Gln Gln Phe Asp Phe Asn | | | | | | | | | | | | | | | | | | | |
| | 25 | | | | | 30 | | | | | 35 | | | | | | | | |
| gtg gat aaa gcc gtg caa gcc ttt gtg gat ggc agt gca att caa gtt | | | | | | | | | | | | | | | | | | | 496 |
| Val Asp Lys Ala Val Gln Ala Phe Val Asp Gly Ser Ala Ile Gln Val | | | | | | | | | | | | | | | | | | | |
| | 40 | | | | 45 | | | | 50 | | | | | | | | | 55 | |
| cta aaa gaa tgg aat atg aca gga aaa aag aag aac aat aaa aga aaa | | | | | | | | | | | | | | | | | | | 544 |
| Leu Lys Glu Trp Asn Met Thr Gly Lys Lys Lys Asn Asn Lys Arg Lys | | | | | | | | | | | | | | | | | | | |
| | | | | 60 | | | | | 65 | | | | | | | 70 | | | |
| aga agc aag tcc aag cag cat caa ggc aac aaa gat gct aaa gac aag | | | | | | | | | | | | | | | | | | | 592 |
| Arg Ser Lys Ser Lys Gln His Gln Gly Asn Lys Asp Ala Lys Asp Lys | | | | | | | | | | | | | | | | | | | |
| | | | 75 | | | | | 80 | | | | | 85 | | | | | | |
| gtg gag agg cct gag gca ggg ccc ctg cag ccg cag cca cca cag att | | | | | | | | | | | | | | | | | | | 640 |
| Val Glu Arg Pro Glu Ala Gly Pro Leu Gln Pro Gln Pro Gln Ile | | | | | | | | | | | | | | | | | | | |
| | 90 | | | | | 95 | | | | | | 100 | | | | | | | |

09564644-094900

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| ccc tct gaa ggc aaa gcg gca aac ccc aaa atg gtg agc agt ctc ccc Pro Ser Glu Gly Lys Ala Ala Asn Pro Lys Met Val Ser Ser Leu Pro 330 335 340 | 1360 |
| agc acc gcc gac ccc tct cac cag acc atg ccg gcc aac aag cag aat Ser Thr Ala Asp Pro Ser His Gln Thr Met Pro Ala Asn Lys Gln Asn 345 350 355 | 1408 |
| gga tct tct aac caa aga cgg aga ttt aat cca cag tat cat aac aac Gly Ser Ser Asn Gln Arg Arg Arg Phe Asn Pro Gln Tyr His Asn Asn 360 365 370 375 | 1456 |
| agg cta aat ggg cct gcc aag tcg cag ggc agt ggg aat gaa gcc gag Arg Leu Asn Gly Pro Ala Lys Ser Gln Gly Ser Gly Asn Glu Ala Glu 380 385 390 | 1504 |
| cca ctg gga aag ggc aac agc cgc cac gaa cac aga aga cag ccg cac Pro Leu Gly Lys Gly Asn Ser Arg His Glu His Arg Arg Gln Pro His 395 400 405 | 1552 |
| aac ggc ttc cgg ccc aaa aac aaa ggc ggt gcc aaa aat caa gag gct Asn Gly Phe Arg Pro Lys Asn Lys Gly Gly Ala Lys Asn Gln Glu Ala 410 415 420 | 1600 |
| tcc ttg ggg atg aag acc ccc gag gcc ccg gcc cat tct gaa aag ccc Ser Leu Gly Met Lys Thr Pro Glu Ala Pro Ala His Ser Glu Lys Pro 425 430 435 | 1648 |
| cgg cga agg cag cac gct gca gac acc tcg gag gcc agg ccc ttc cgg Arg Arg Arg Gln His Ala Ala Asp Thr Ser Glu Ala Arg Pro Phe Arg 440 445 450 455 | 1696 |
| ggt agt gtc ggt agg gtt tca cag tgc aat ctc tgc ccc acg aga ata Gly Ser Val Gly Arg Val Ser Gln Cys Asn Leu Cys Pro Thr Arg Ile 460 465 470 | 1744 |
| gaa gtt tcc aca gat gca gca gtt ctc tca gtc ccg gct gtg acg ttg Glu Val Ser Thr Asp Ala Ala Val Leu Ser Val Pro Ala Val Thr Leu 475 480 485 | 1792 |
| gtg gcc tga gctagga ggaaaaagag cagttttcac tcagtttttg ttcctgccc Val Ala * 490 | 1848 |
| gaggtgctga cccaattcgc tgccaaaaga gtgtcaatca gaataatacaa atcccgtatg | 1908 |
| gttgtgtcat cctctcttaa tcattttttac taattctaata aatcagctct agcttgcttc | 1968 |
| ataattttca tggctttgct tgatctgttg atgctttctc tcatcaagac tttgcagcat | 2028 |
| tttagccagg cagtatttac tcattattag gaaaatcaag atgtggctga agatcagagg | 2088 |
| ctcagttagc aacctgtggt gtagcagtga tgtcagtcca ttgattgtct ttagagagtt | 2148 |
| aatgttaciaa aaaagaattc ttaataatca gacaaacatg atctgctgag gacacatgcg | 2208 |
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2311

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| cgtggctcct | gagacttctt | ggggcctgat | ttgattaacc | caggaagagt | ctcagacctc | 120 |
| atgaagtact | gccaggtctg | gcagcacttg | gccaaagcgg | gcaggtctgt | gttgaggttg | 180 |
| ctttatgcag | actaacaag | ggatcattct | gctgtgtacc | tgtccctatt | ctagaccctg | 240 |
| gtgggcagca | gtgggaccat | tctgaccaca | atgcctgta | atg atg ggg caa gag | | 294 |
| | | | | Met Met Gly Gln Glu | | |
| | | | | 1 5 | | |
| aaa gtg ccc att aag cag gta cct ggg gga gtc aag cag ctt gag ccc | | | | | | 342 |
| Lys Val Pro Ile Lys Gln Val Pro Gly Gly Val Lys Gln Leu Glu Pro | | | | | | |
| | 10 | | 15 | | 20 | |
| ccc aaa gaa gga gaa agg cgg aca acc cat aat atc att gag aaa cga | | | | | | 390 |
| Pro Lys Glu Gly Glu Arg Arg Thr Thr His Asn Ile Ile Glu Lys Arg | | | | | | |
| | 25 | | 30 | | 35 | |
| tat cgc tcc tcc atc aat gac aaa atc atc gaa ttg aaa gac ctg gtc | | | | | | 438 |
| Tyr Arg Ser Ser Ile Asn Asp Lys Ile Ile Glu Leu Lys Asp Leu Val | | | | | | |
| | 40 | | 45 | | 50 | |
| atg ggg aca gac gcc aag atg cac aag tct ggc gtt ctg agg aag gcc | | | | | | 486 |
| Met Gly Thr Asp Ala Lys Met His Lys Ser Gly Val Leu Arg Lys Ala | | | | | | |
| | 55 | | 60 | | 65 | |
| att gat tac acc aga tgc ctg aaa ggc ctc cat ggc ttt cct gcc ctt | | | | | | 534 |
| Ile Asp Tyr Thr Arg Cys Leu Lys Gly Leu His Gly Phe Pro Ala Leu | | | | | | |
| | 70 | | 75 | | 80 | 85 |
| cct ggt tcc gga cag ctg ggg aaa ggc cac agc agc tcc tct gct gcc | | | | | | 582 |
| Pro Gly Ser Gly Gln Leu Gly Lys Gly His Ser Ser Ser Ser Ala Ala | | | | | | |
| | 90 | | 95 | | 100 | |
| ctg cag tct ttg ggg gcg ggg agg gct gga cat gtg gaa ccc tga tgc | | | | | | 630 |
| Leu Gln Ser Leu Gly Ala Gly Arg Ala Gly His Val Glu Pro * | | | | | | |
| | 105 | | 110 | | 115 | |
| agccgcagcg tcaaggacga ggaaggggtg ggaagggatg gtacgtggag gggaatgggt | | | | | | 690 |

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746

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ccgggacggc gccgcagcag ggctacggat ctctcggtcc ctgcccttca aatcacctct 180
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Met Val Phe Leu Gln Asn His Val Arg Phe Phe Leu
1 5 10
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Glu Ser Leu Pro Ala Phe Leu Arg Val Leu Ile Gln Ala Gly Ala Leu
15 20 25
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Cys Trp Ser Leu Pro Glu Leu Ser Gln Gly Glu Val Gly Lys Gly Ala
30 35 40
tgt cca gca gaa gtt ggg aag cac aga gat cat ctg cct tct tct gac 552
Cys Pro Ala Glu Val Gly Lys His Arg Asp His Leu Pro Ser Ser Asp
45 50 55 60
ccg gta ttg atg cag gct gag gcc tct gtt gta atg tgc tgg gtg tca 600
Pro Val Leu Met Gln Ala Glu Ala Ser Val Val Met Cys Trp Val Ser
65 70 75
tct gaa gac aga agt gcc ctg tgg gct ttg gtt acg ttc tat ggg gga 648
Ser Glu Asp Arg Ser Ala Leu Trp Ala Leu Val Thr Phe Tyr Gly Gly
80 85 90

| | |
|---|------|
| gat tgc cag cta acc ctc aat aag aaa tgc acg cat ttg att gtt cca Asp Cys Gln Leu Thr Leu Asn Lys Lys Cys Thr His Leu Ile Val Pro 95 100 105 | 696 |
| gag cca aag ggg ggg aaa tac gaa tgt gct tta aag cga gca agt att Glu Pro Lys Gly Gly Lys Tyr Glu Cys Ala Leu Lys Arg Ala Ser Ile 110 115 120 | 744 |
| aaa att gtg act cct gac tgg gtt ctg gat tgc gta tca gag aaa acc Lys Ile Val Thr Pro Asp Trp Val Leu Asp Cys Val Ser Glu Lys Thr 125 130 135 140 | 792 |
| aaa aag gac gaa gca ttt tat cat cct cgt ctg att att tat gaa gag Lys Lys Asp Glu Ala Phe Tyr His Pro Arg Leu Ile Ile Tyr Glu Glu 145 150 155 | 840 |
| gaa gaa gag gaa gag gaa gag gag gag gaa gta gaa aat gag gaa caa Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Val Glu Asn Glu Glu Gln 160 165 170 | 888 |
| gat tct cag aat gag ggt agt aca gat gag aag tca agc cct gcc agc Asp Ser Gln Asn Glu Gly Ser Thr Asp Glu Lys Ser Ser Pro Ala Ser 175 180 185 | 936 |
| tct caa gaa ggg tct cct tca ggt gac cag cag ttt tca cct aaa tcc Ser Gln Glu Gly Ser Pro Ser Gly Asp Gln Gln Phe Ser Pro Lys Ser 190 195 200 | 984 |
| aac act gaa aaa tct aaa ggg gaa tta atg ttt gat gat tct tca gat Asn Thr Glu Lys Ser Lys Gly Glu Leu Met Phe Asp Asp Ser Ser Asp 205 210 215 220 | 1032 |
| tca tca ccg gaa aaa cag gag aga aat tta aac tgg acc ccg gcc gaa Ser Ser Pro Glu Lys Gln Glu Arg Asn Leu Asn Trp Thr Pro Ala Glu 225 230 235 | 1080 |
| gtc cca cag tta gct gca gca aaa cgc agg ctg cct cag gga aag gag Val Pro Gln Leu Ala Ala Ala Lys Arg Arg Leu Pro Gln Gly Lys Glu 240 245 250 | 1128 |
| cct ggg ttg att aac ttg tgt gcc aat gtc cca ccc gtc cca ggt aac Pro Gly Leu Ile Asn Leu Cys Ala Asn Val Pro Pro Val Pro Gly Asn 255 260 265 | 1176 |
| att ttg ccc cct gag gtc cgg ggt aat tta atg gct gct gga caa aac Ile Leu Pro Pro Glu Val Arg Gly Asn Leu Met Ala Ala Gly Gln Asn 270 275 280 | 1224 |
| ctc caa agt tct gaa aga tca gaa atg ata gct acc tgg agt cca gct Leu Gln Ser Ser Glu Arg Ser Glu Met Ile Ala Thr Trp Ser Pro Ala 285 290 295 300 | 1272 |
| gta cgg aca ctg agg aat att act aat aat gct gac att cag cag atg Val Arg Thr Leu Arg Asn Ile Thr Asn Asn Ala Asp Ile Gln Gln Met 305 310 315 | 1320 |
| aac cgg cca tca aat gta gca cat atc tta cag act ctt tca gca cct | 1368 |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Asn | Arg | Pro | Ser | Asn | Val | Ala | His | Ile | Leu | Gln | Thr | Leu | Ser | Ala | Pro | |
| 320 | | | | | | 325 | | | | | | 330 | | | | |
| acg | aaa | aat | tta | gaa | cag | cag | gtg | aat | cac | agc | cag | cag | gga | cat | aca | 1416 |
| Thr | Lys | Asn | Leu | Glu | Gln | Gln | Val | Asn | His | Ser | Gln | Gln | Gly | His | Thr | |
| 335 | | | | | | 340 | | | | | | 345 | | | | |
| aat | gcc | aat | gca | gtg | ctg | ttt | agc | caa | gtg | aaa | gtg | act | cca | gag | aca | 1464 |
| Asn | Ala | Asn | Ala | Val | Leu | Phe | Ser | Gln | Val | Lys | Val | Thr | Pro | Glu | Thr | |
| 350 | | | | | | 355 | | | | | | 360 | | | | |
| cac | atg | cta | cag | cag | cag | cag | cag | gcc | cag | cag | cag | cag | cag | cag | cac | 1512 |
| His | Met | Leu | Gln | Gln | Gln | Gln | Gln | Ala | Gln | Gln | Gln | Gln | Gln | Gln | His | |
| 365 | | | | | | 370 | | | | | | 375 | | | 380 | |
| ccg | gtt | tta | cac | ctt | cag | ccc | cag | cag | ata | atg | cag | ctc | cag | cag | cag | 1560 |
| Pro | Val | Leu | His | Leu | Gln | Pro | Gln | Gln | Ile | Met | Gln | Leu | Gln | Gln | Gln | |
| | | | 385 | | | | | | 390 | | | | | | 395 | |
| cag | cag | cag | cag | atc | tct | cag | caa | cct | tac | ccc | cag | cag | ccg | ccg | cat | 1608 |
| Gln | Gln | Gln | Gln | Ile | Ser | Gln | Gln | Pro | Tyr | Pro | Gln | Gln | Pro | Pro | His | |
| | | | 400 | | | 405 | | | | | | 410 | | | | |
| cca | ttt | tca | cag | cag | cag | cag | cag | caa | cag | cag | cca | cca | cca | tcg | cct | 1656 |
| Pro | Phe | Ser | Gln | Gln | Gln | Gln | Gln | Gln | Gln | Gln | Pro | Pro | Pro | Ser | Pro | |
| 415 | | | | | | 420 | | | | | | 425 | | | | |
| cag | cag | cat | cag | ctt | ttt | gga | cat | gat | cca | gca | gtg | gag | att | cca | gaa | 1704 |
| Gln | Gln | His | Gln | Leu | Phe | Gly | His | Asp | Pro | Ala | Val | gag | Glu | Ile | Pro | |
| 430 | | | | | | 435 | | | | | | 440 | | | | |
| gaa | ggc | ttc | tta | ttg | gga | tgt | gtg | ttt | gca | att | gcg | gat | tat | cca | gag | 1752 |
| Glu | Gly | Phe | Leu | Leu | Gly | Cys | Val | Phe | Ala | Ile | Ala | Asp | Tyr | Pro | Glu | |
| 445 | | | | | | 450 | | | | | | 455 | | | 460 | |
| cag | atg | tct | gat | aag | caa | ctg | ctg | gcc | acc | tgg | aaa | agg | ata | atc | cag | 1800 |
| Gln | Met | Ser | Asp | Lys | Gln | Leu | Leu | Ala | Thr | Trp | Lys | Arg | Ile | Ile | Gln | |
| | | | 465 | | | | | | 470 | | | | | | 475 | |
| gca | cat | ggc | ggc | act | gtt | gac | ccc | acc | ttc | acg | agt | cga | tgc | acg | cac | 1848 |
| Ala | His | Gly | Gly | Thr | Val | Asp | Pro | Thr | Phe | Thr | Ser | Arg | Cys | Thr | His | |
| | | | 480 | | | 485 | | | | | | 490 | | | | |
| ctt | ctc | tgt | gag | agt | caa | gtc | agc | agc | gcg | tat | gca | cag | gca | ata | aga | 1896 |
| Leu | Leu | Cys | Glu | Ser | Gln | Val | Ser | Ser | Ala | Tyr | Ala | Gln | Ala | Ile | Arg | |
| 495 | | | | | | 500 | | | | | | 505 | | | | |
| gaa | aga | aag | aga | tgt | gtt | act | gca | cac | tgg | tta | aac | aca | gtc | tta | aaa | 1944 |
| Glu | Arg | Lys | Arg | Cys | Val | Thr | Ala | His | Trp | Leu | Asn | Thr | Val | Leu | Lys | |
| 510 | | | | | | 515 | | | | | | 520 | | | | |
| aaa | aaa | aaa | atg | gta | ccg | ccg | cac | cga | gcc | ctt | cac | ttc | cca | gtg | gcc | 1992 |
| Lys | Lys | Lys | Met | Val | Pro | Pro | His | Arg | Ala | Leu | His | Phe | Pro | Val | Ala | |
| 525 | | | | | | 530 | | | | | | 535 | | | 540 | |
| ttc | cca | cca | gga | gga | aag | cca | tgt | tca | cag | cat | att | att | tct | gtg | act | 2040 |
| Phe | Pro | Pro | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|------|--|
| | | | | 545 | | | | 550 | | | | 555 | | | | | | |
| gga | ttt | gtt | gat | agt | gac | aga | gat | gac | cta | aaa | tta | atg | gct | tat | ttg | | 2088 | |
| Gly | Phe | Val | Asp | Ser | Asp | Arg | Asp | Asp | Leu | Lys | Leu | Met | Ala | Tyr | Leu | | | |
| 560 | | | | 565 | | | | 570 | | | | | | | | | | |
| gca | ggg | gcc | aaa | tat | acg | ggg | tat | cta | tgc | cgc | agc | aac | aca | gtc | ctc | | 2136 | |
| Ala | Gly | Ala | Lys | Tyr | Thr | Gly | Tyr | Leu | Cys | Arg | Ser | Asn | Thr | Val | Leu | | | |
| 575 | | | | 580 | | | | 585 | | | | | | | | | | |
| atc | tgt | aaa | gaa | cca | act | ggg | tta | aag | tat | gaa | aaa | gcc | aaa | gag | tgg | | 2184 | |
| Ile | Cys | Lys | Glu | Pro | Thr | Gly | Leu | Lys | Tyr | Glu | Lys | Ala | Lys | Glu | Trp | | | |
| 590 | | | | 595 | | | | 600 | | | | | | | | | | |
| agg | ata | ccc | tgt | gtc | aac | gcc | cag | tgg | ctt | ggc | gac | att | ctt | ctg | gga | | 2232 | |
| Arg | Ile | Pro | Cys | Val | Asn | Ala | Gln | Trp | Leu | Gly | Asp | Ile | Leu | Leu | Gly | | | |
| 605 | | | | 610 | | | | 615 | | | | | | | | | | |
| aac | ttt | gag | gca | ctg | agg | cag | att | cag | tat | agt | cgc | tac | acg | gca | ttc | | 2280 | |
| Asn | Phe | Glu | Ala | Leu | Arg | Gln | Ile | Gln | Tyr | Ser | Arg | Tyr | Thr | Ala | Phe | | | |
| 625 | | | | 630 | | | | 635 | | | | | | | | | | |
| agt | ctg | cag | gat | cca | ttt | gcc | cct | acc | cag | cat | tta | gtt | tta | aat | ctt | | 2328 | |
| Ser | Leu | Gln | Asp | Pro | Phe | Ala | Pro | Thr | Gln | His | Leu | Val | Leu | Asn | Leu | | | |
| 640 | | | | 645 | | | | 650 | | | | | | | | | | |
| tta | gat | gct | tgg | aga | gtt | ccc | tta | aaa | gtg | tct | gca | gag | ttg | ttg | atg | | 2376 | |
| Leu | Asp | Ala | Trp | Arg | Val | Pro | Leu | Lys | Val | Ser | Ala | Glu | Leu | Leu | Met | | | |
| 655 | | | | 660 | | | | 665 | | | | | | | | | | |
| agt | ata | aga | cta | cct | ccc | aaa | ctg | aaa | cag | aat | gaa | gta | gct | aat | gtc | | 2424 | |
| Ser | Ile | Arg | Leu | Pro | Pro | Lys | Leu | Lys | Gln | Asn | Glu | Val | Ala | Asn | Val | | | |
| 670 | | | | 675 | | | | 680 | | | | | | | | | | |
| cag | cct | tct | tcc | caa | aga | gcc | aga | att | gaa | gac | gta | cca | cct | ccc | act | | 2472 | |
| Gln | Pro | Ser | Ser | Gln | Arg | Ala | Arg | Ile | Glu | Asp | Val | Pro | Pro | Pro | Thr | | | |
| 685 | | | | 690 | | | | 695 | | | | | | | | | | |
| aaa | aag | cta | act | cca | gaa | ttg | acc | cct | ttt | gtg | ctt | ttc | act | gga | ttc | | 2520 | |
| Lys | Lys | Leu | Thr | Pro | Glu | Leu | Thr | Pro | Phe | Val | Leu | Phe | Thr | Gly | Phe | | | |
| 705 | | | | 710 | | | | 715 | | | | | | | | | | |
| gag | cct | gtc | cag | gtt | caa | cag | tat | att | aag | aag | ctc | tac | att | ctt | ggg | | 2568 | |
| Glu | Pro | Val | Gln | Val | Gln | Gln | Tyr | Ile | Lys | Lys | Leu | Tyr | Ile | Leu | Gly | | | |
| 720 | | | | 725 | | | | 730 | | | | | | | | | | |
| gga | gag | gtt | gcg | gag | tct | gca | cag | aag | tgc | aca | cac | ctc | att | gcc | agc | | 2616 | |
| Gly | Glu | Val | Ala | Glu | Ser | Ala | Gln | Lys | Cys | Thr | His | Leu | Ile | Ala | Ser | | | |
| 735 | | | | 740 | | | | 745 | | | | | | | | | | |
| aaa | gtg | act | cgc | acc | gtg | aag | ttc | ctg | acg | gcg | att | tct | gtc | gtg | aag | | 2664 | |
| Lys | Val | Thr | Arg | Thr | Val | Lys | Phe | Leu | Thr | Ala | Ile | Ser | Val | Val | Lys | | | |
| 750 | | | | 755 | | | | 760 | | | | | | | | | | |
| cac | ata | gtg | acg | cca | gag | tgg | ctg | gaa | gaa | tgc | ttc | agg | tgt | cag | aag | | 2712 | |
| His | Ile | Val | Thr | Pro | Glu | Trp | Leu | Glu | | | | | | | | | | |

| | |
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| ttc att gat gag cag aac tac att ctc cga gat gct gag gca gaa gta Phe Ile Asp Glu Gln Asn Tyr Ile Leu Arg Asp Ala Glu Ala Glu Val | 2760 |
| 785 790 795 | |
| ctt ttc tct ttc agc ttg gaa gaa tcc tta aaa cgg gca cac gtt tct Leu Phe Ser Phe Ser Leu Glu Glu Ser Leu Lys Arg Ala His Val Ser | 2808 |
| 800 805 810 | |
| cca ctc ttt aag gca aaa tat ttt tac atc aca cct gga atc tgc cca Pro Leu Phe Lys Ala Lys Tyr Phe Tyr Ile Thr Pro Gly Ile Cys Pro | 2856 |
| 815 820 825 | |
| agt ctt tcc act atg aag gca atc gta gag tgt gca gga gga aag gtg Ser Leu Ser Thr Met Lys Ala Ile Val Glu Cys Ala Gly Gly Lys Val | 2904 |
| 830 835 840 | |
| tta tcc aag cag cca tct ttc cgg aag ctc atg gag cac aag cag aac Leu Ser Lys Gln Pro Ser Phe Arg Lys Leu Met Glu His Lys Gln Asn | 2952 |
| 845 850 855 860 | |
| tcg agt ttg tcg gaa ata att tta ata tcc tgt gaa aat gac ctt cat Ser Ser Leu Ser Glu Ile Ile Leu Ile Ser Cys Glu Asn Asp Leu His | 3000 |
| 865 870 875 | |
| tta tgc cga gaa tat ttt gcc aga ggc ata gat gtt cac aat gca gag Leu Cys Arg Glu Tyr Phe Ala Arg Gly Ile Asp Val His Asn Ala Glu | 3048 |
| 880 885 890 | |
| ttc gtt ctg act gga gtg ctc act caa acg ctg gac tat gaa tca tat Phe Val Leu Thr Gly Val Leu Thr Gln Thr Leu Asp Tyr Glu Ser Tyr | 3096 |
| 895 900 905 | |
| aag ttt aac tga tgg cgtctaggct gccgtgcatg tgcactcctg cgggtgcgggg Lys Phe Asn * | 3151 |
| 910 | |
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| tatggatggt aaagatttga aatgttttgt actttgatta tttttatttc ttatactctg | 3511 |
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Leu Pro Pro Cys Ser Leu Ile Ser Asp Cys Cys Ala Ser Asn Gln Arg
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gat tcc gtg ggc gta gga ccc tct gag cca ggt gtg gga tat agt ctc      507
Asp Ser Val Gly Val Gly Pro Ser Glu Pro Gly Val Gly Tyr Ser Leu
          30                      35                      40

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Val Val Arg Arg Phe Leu Ser Arg Ser Glu Lys Arg Asn Ile Arg Val
          45                      50                      55

gga gtg acc cga ttt tcc agg tgc gtc cgt cac ccc ttt ctt tga ctc      603
Gly Val Thr Arg Phe Ser Arg Cys Val Arg His Pro Phe Leu  *
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Ser Gly Tyr Arg Leu Ser Leu Leu Leu Leu Ala Ala Leu Gly Ser Gly
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cgc gcg gag cgc gac tgc cga gtg agc agc ttc cga gtc aag gag aac      329
Arg Ala Glu Arg Asp Cys Arg Val Ser Ser Phe Arg Val Lys Glu Asn
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ttc gac aag gct cgc ttc tct ggg acc tgg tac gcc atg gcc aag aag      377
Phe Asp Lys Ala Arg Phe Ser Gly Thr Trp Tyr Ala Met Ala Lys Lys
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gac ccc gag ggc ctc ttt ctg cag gac aac atc gtc gcg gag ttc tcc      425
Asp Pro Glu Gly Leu Phe Leu Gln Asp Asn Ile Val Ala Glu Phe Ser
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gtg gac gag acc ggc cag atg agc gcc aca gcc aag ggc cga gtc cgt      473
Val Asp Glu Thr Gly Gln Met Ser Ala Thr Ala Lys Gly Arg Val Arg
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ctt ttg aat aac tgg gac gtg tgc gca gac atg gtg ggc acc ttc aca      521
Leu Leu Asn Asn Trp Asp Val Cys Ala Asp Met Val Gly Thr Phe Thr
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gac acc gag gac cct gcc aag ttc aag atg aag tac tgg ggc gta gcc      569
Asp Thr Glu Asp Pro Ala Lys Phe Lys Met Lys Tyr Trp Gly Val Ala
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tcc ttt ctc cag aaa gga aat gat gac cac tgg atc gtc gac aca gac      617
Ser Phe Leu Gln Lys Gly Asn Asp Asp His Trp Ile Val Asp Thr Asp
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tac gac acg tat gcc gtg cag tac tcc tgc cgc ctc ctg aac ctc gat      665
Tyr Asp Thr Tyr Ala Val Gln Tyr Ser Cys Arg Leu Leu Asn Leu Asp
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| Gly Thr Cys Ala Asp Ser Tyr Ser Phe Val Phe Ser Arg Asp Pro Asn | |
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| ggc ctg ccc cca gaa gcg cag aag att gta agg cag cgg cag gag gag | 761 |
| Gly Leu Pro Pro Glu Ala Gln Lys Ile Val Arg Gln Arg Gln Glu Glu | |
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| ctg tgc ctg gcc agg cag tac agg ctg atc gtc cac aac ggt tac tgc | 809 |
| Leu Cys Leu Ala Arg Gln Tyr Arg Leu Ile Val His Asn Gly Tyr Cys | |
| 185 190 195 | |
| gat ggc aga tca gaa aga aac ctt ttg tag c aatatcaaga atctagtttc | 860 |
| Asp Gly Arg Ser Glu Arg Asn Leu Leu * | |
| 200 205 | |
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| 1 5 | |
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| Tyr Gly Tyr Ile Arg Thr Val Leu Gly Gln Gln Ile Leu Gly Gln Leu | |
| 10 15 20 25 | |
| gac agc tcc agc ctg gcg ctg ccc tcc gag gcc aag ctg aag ctg gcg | 148 |
| Asp Ser Ser Ser Leu Ala Leu Pro Ser Glu Ala Lys Leu Lys Leu Ala | |
| 30 35 40 | |
| ggg agc agc ggc cgc ggc ggc cag aca gtc aag agc ctg cgg atc cag | 196 |
| Gly Ser Ser Gly Arg Gly Gly Gln Thr Val Lys Ser Leu Arg Ile Gln | |
| 45 50 55 | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| cag | aac | agg | gct | tcc | agg | tcc | tcc | tgg | cat | cag | agc | tcc | ttc | cac | agc | 916 |
| Gln | Asn | Arg | Ala | Ser | Arg | Ser | Ser | Trp | His | Gln | Ser | Ser | Phe | His | Ser | |
| | | | 285 | | | | | 290 | | | | | 295 | | | |
| acc | cgc | acg | ctg | agg | gaa | gct | ggg | ccc | agt | gtc | gcc | gtg | gat | tcc | agc | 964 |
| Thr | Arg | Thr | Leu | Arg | Glu | Ala | Gly | Pro | Ser | Val | Ala | Val | Asp | Ser | Ser | |
| | | | 300 | | | | 305 | | | | | 310 | | | | |
| ggg | agg | aga | gcg | cac | ttg | act | gtc | ggc | cag | gcg | gcc | gca | ggg | gga | agt | 1012 |
| Gly | Arg | Arg | Ala | His | Leu | Thr | Val | Gly | Gln | Ala | Ala | Ala | Gly | Gly | Ser | |
| | | | 315 | | | 320 | | | | | 325 | | | | | |
| ggg | aat | ctg | ctc | act | gag | aga | agc | act | ttc | act | gac | tcc | cag | ctg | ggg | 1060 |
| Gly | Asn | Leu | Leu | Thr | Glu | Arg | Ser | Thr | Phe | Thr | Asp | Ser | Gln | Leu | Gly | |
| 330 | | | | | 335 | | | | 340 | | | | | | 345 | |
| aat | gca | gac | atg | gag | atg | act | ctg | gag | cga | gca | gtg | agt | atg | ctc | gag | 1108 |
| Asn | Ala | Asp | Met | Glu | Met | Thr | Leu | Glu | Arg | Ala | Val | Ser | Met | Leu | Glu | |
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| gca | gac | cac | atg | ccg | cca | tcc | agg | att | tct | gct | gca | gct | act | ttc | ata | 1156 |
| Ala | Asp | His | Met | Pro | Pro | Ser | Arg | Ile | Ser | Ala | Ala | Ala | Thr | Phe | Ile | |
| | | | 365 | | | | | 370 | | | | | 375 | | | |
| cag | cac | gag | tgc | ttc | cag | aaa | tct | gaa | gct | cgg | aag | agg | gtt | aac | cag | 1204 |
| Gln | His | Glu | Cys | Phe | Gln | Lys | Ser | Glu | Ala | Arg | Lys | Arg | Val | Asn | Gln | |
| | | | 380 | | | | 385 | | | | | 390 | | | | |
| ctt | cgt | ggc | atc | ctc | aag | ctt | ctg | cag | ctc | cta | aaa | gtt | cag | aat | gaa | 1252 |
| Leu | Arg | Gly | Ile | Leu | Lys | Leu | Leu | Gln | Leu | Leu | Lys | Val | Gln | Asn | Glu | |
| | | | 395 | | | 400 | | | | | 405 | | | | | |
| gac | gtt | cag | cga | gct | gtg | tgt | ggg | gcc | ttg | aga | aac | tta | gta | ttt | gaa | 1300 |
| Asp | Val | Gln | Arg | Ala | Val | Cys | Gly | Ala | Leu | Arg | Asn | Leu | Val | Phe | Glu | |
| 410 | | | | 415 | | | | 420 | | | | | | 425 | | |
| gac | aat | gac | aac | aaa | ttg | gag | gtg | gct | gaa | cta | aat | ggg | gta | cct | cgg | 1348 |
| Asp | Asn | Asp | Asn | Lys | Leu | Glu | Val | Ala | Glu | Leu | Asn | Gly | Val | Pro | Arg | |
| | | | | 430 | | | | 435 | | | | | | 440 | | |
| ctg | ctc | cag | gtg | ctg | aag | caa | acc | aga | gac | ttg | gag | act | aaa | aaa | caa | 1396 |
| Leu | Leu | Gln | Val | Leu | Lys | Gln | Thr | Arg | Asp | Leu | Glu | Thr | Lys | Lys | Gln | |
| | | | 445 | | | | 450 | | | | | | 455 | | | |
| ata | aca | ggc | ttg | ctg | tgg | aat | ttg | tca | tct | aat | gac | aaa | ctc | aag | aat | 1444 |
| Ile | Thr | Gly | Leu | Leu | Trp | Asn | Leu | Ser | Ser | Asn | Asp | Lys | Leu | Lys | Asn | |
| | | | 460 | | | 465 | | | | | | 470 | | | | |
| ctc | atg | ata | aca | gaa | gca | ttg | ctt | acg | ctg | acg | gag | aat | atc | atc | atc | 1492 |
| Leu | Met | Ile | Thr | Glu | Ala | Leu | Leu | Thr | Leu | Thr | Glu | Asn | Ile | Ile | Ile | |
| | | | 475 | | | 480 | | | | | | | | | | |

| | |
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| Leu Asp Phe Asp Ile Phe Tyr Asn Val Thr Gly Cys Leu Arg Asn Met | |
| 510 515 520 | |
| agt tct gct ggc gct gat ggg aga aaa gcg atg aga aga tgt gac gga | 1636 |
| Ser Ser Ala Gly Ala Asp Gly Arg Lys Ala Met Arg Arg Cys Asp Gly | |
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| Leu Ile Asp Ser Leu Val His Tyr Val Arg Gly Thr Ile Ala Asp Tyr | |
| 540 545 550 | |
| cag cca gat gac aag gcc acg gag aat tgt gtg tgc att ctt cat aac | 1732 |
| Gln Pro Asp Asp Lys Ala Thr Glu Asn Cys Val Cys Ile Leu His Asn | |
| 555 560 565 | |
| ctc tcc tac cag ctg gag gca gag ctc cca gag aaa tat tcc cag aat | 1780 |
| Leu Ser Tyr Gln Leu Glu Ala Glu Leu Pro Glu Lys Tyr Ser Gln Asn | |
| 570 575 580 585 | |
| atc tat att caa aac cgg aat atc cag act gac aac aac aaa agt att | 1828 |
| Ile Tyr Ile Gln Asn Arg Asn Ile Gln Thr Asp Asn Asn Lys Ser Ile | |
| 590 595 600 | |
| gga tgt ttt ggc agt cga agc agg aaa gta aaa gag caa tac cag gac | 1876 |
| Gly Cys Phe Gly Ser Arg Ser Arg Lys Val Lys Glu Gln Tyr Gln Asp | |
| 605 610 615 | |
| gtg ccg atg ccg gag gaa aag agc aac ccc aag ggc gtg gag tgg ctg | 1924 |
| Val Pro Met Pro Glu Glu Lys Ser Asn Pro Lys Gly Val Glu Trp Leu | |
| 620 625 630 | |
| tgg cat tcc att gtt ata agg atg tat ctg tcc ttg atc gcc aaa agt | 1972 |
| Trp His Ser Ile Val Ile Arg Met Tyr Leu Ser Leu Ile Ala Lys Ser | |
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| Val Arg Asn Tyr Thr Gln Glu Ala Ser Leu Gly Ala Leu Gln Asn Leu | |
| 650 655 660 665 | |
| acg gcc gga agt gga cca atg ccg aca tca gtg gct cag aca gtt gtc | 2068 |
| Thr Ala Gly Ser Gly Pro Met Pro Thr Ser Val Ala Gln Thr Val Val | |
| 670 675 680 | |
| cag aag gaa agt ggc ctg cag cac acc cga aag atg ctg cat gtt ggt | 2116 |
| Gln Lys Glu Ser Gly Leu Gln His Thr Arg Lys Met Leu His Val Gly | |
| 685 690 695 | |
| gac cca agt gtg aaa aag aca gcc atc tcg ctg ctg agg aat ctg tcc | 2164 |
| Asp Pro Ser Val Lys Lys Thr Ala Ile Ser Leu Leu Arg Asn Leu Ser | |
| 700 705 710 | |
| cgg aat ctt tct ctg cag aat gaa att gcc aaa gaa act ctc cct gat | 2212 |
| Arg Asn Leu Ser Leu Gln Asn Glu Ile Ala Lys Glu Thr Leu Pro Asp | |
| 715 720 725 | |
| ttg gtt tcc atc att cct gac aca gtc ccg agt act gac ctt ctc att | 2260 |
| Leu Val Ser Ile Ile Pro Asp Thr Val Pro Ser Thr Asp Leu Leu Ile | |

| 730 | 735 | | | | | 740 | | | | | 745 | | | | | |
|--|-----------------|--|--|--|--|---------------------|--|--|--|--|---------|--|--|--|--|------|
| gaa act aca gcc tct gcc tgt tac aca ttg aac aac ata atc caa aac | | | | | | | | | | | | | | | | 2308 |
| Glu Thr Thr Ala Ser | Ala Cys Tyr Thr | | | | | Leu Asn Asn Ile Ile | | | | | Gln Asn | | | | | |
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| Ser Tyr Gln Asn Ala Arg Asp Leu Leu Asn Thr Gly Gly Ile Gln Lys | | | | | | | | | | | | | | | | |
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| att atg gcc att agt gca ggc gat gcc tat gcc tcc aac aaa gca agt | | | | | | | | | | | | | | | | 2404 |
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| aaa gct gct tcc gtc ctt ctg tat tct ctg tgg gca cac acg gaa ctg | | | | | | | | | | | | | | | | 2452 |
| Lys Ala Ala Ser Val Leu Leu Tyr Ser Leu Trp Ala His Thr Glu Leu | | | | | | | | | | | | | | | | |
| | 795 | | | | | 800 | | | | | 805 | | | | | |
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| His His Ala Tyr Lys Lys Ala Gln Phe Lys Lys Thr Asp Phe Val Asn | | | | | | | | | | | | | | | | |
| 810 | 815 | | | | | 820 | | | | | 825 | | | | | |
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aggcattaat aaagccttcg ataataataa atacaaaaaa aaagggcggc cgctctagag 4229
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Ala Thr His Thr Pro Pro Leu Ala Ser Pro Gly Met Ala Arg Ile Cys
5 10 15
ctt tac ggg gat tta caa cga ttt ggt cgc cgc atc gac ctt cgt gtg 152
Leu Tyr Gly Asp Leu Gln Arg Phe Gly Arg Arg Ile Asp Leu Arg Val
20 25 30
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 Met Asp Asp Leu Thr
 1 5
 aag ttg gta cag gaa cag aaa cct aaa ggc agt cag cga agt cgg aaa 163
 Lys Leu Val Gln Glu Gln Lys Pro Lys Gly Ser Gln Arg Ser Arg Lys
 10 15 20
 aga ggc cat acg gct tca gaa tct gat gaa cag cag tgg cct gag gaa 211
 Arg Gly His Thr Ala Ser Glu Ser Asp Glu Gln Gln Trp Pro Glu Glu
 25 30 35
 aag agg ctc aaa gaa gat ata tta gaa aat gaa gat gaa cag aat agt 259
 Lys Arg Leu Lys Glu Asp Ile Leu Glu Asn Glu Asp Glu Gln Asn Ser
 40 45 50
 ccg cca aaa aag ggt aaa aga ggc cga cca cca aaa cct ctt ggt gga 307
 Pro Pro Lys Lys Gly Lys Arg Gly Arg Pro Pro Lys Pro Leu Gly Gly
 55 60 65
 ggt aca cca aaa gaa gag cca aca atg aaa act tct aaa aaa gga agc 355
 Gly Thr Pro Lys Glu Glu Pro Thr Met Lys Thr Ser Lys Lys Gly Ser
 70 75 80 85
 aaa aaa aaa tct gga cct cca gca cca gag gag gag gaa gaa gaa gaa 403
 Lys Lys Lys Ser Gly Pro Pro Ala Pro Glu Glu Glu Glu Glu Glu Glu
 90 95 100
 aga caa agt gga aat acg gaa cag aag tcc aaa agc aaa cag cac cga 451
 Arg Gln Ser Gly Asn Thr Glu Gln Lys Ser Lys Ser Lys Gln His Arg
 105 110 115
 gtg tca agg aga gca cag cag aga gca gaa tct cct gaa tct agt gca 499
 Val Ser Arg Arg Ala Gln Gln Arg Ala Glu Ser Pro Glu Ser Ser Ala
 120 125 130
 att gaa tcc aca cag tcc aca cca cag aaa gga cga gga aga cca tca 547
 Ile Glu Ser Thr Gln Ser Thr Pro Gln Lys Gly Arg Gly Arg Pro Ser
 135 140 145
 aaa acg cca tca cca tca caa cca aaa aaa aat gtc cgt gta gga cgc 595
 Lys Thr Pro Ser Pro Ser Gln Pro Lys Lys Asn Val Arg Val Gly Arg

| 150 | 155 | 160 | 165 | |
|---|-----|-----|-----|-----|
| tcc aaa caa gca gct act aag gaa aat gat tca agt gaa gaa gta gat | | | | 643 |
| Ser Lys Gln Ala Ala Thr Lys Glu Asn Asp Ser Ser Glu Glu Val Asp | | | | |
| | 170 | 175 | 180 | |
| gtg ttt cag ggt agc tct cct gtc gat gat att cca cag gaa gaa aca | | | | 691 |
| Val Phe Gln Gly Ser Ser Pro Val Asp Asp Ile Pro Gln Glu Glu Thr | | | | |
| | 185 | 190 | 195 | |
| gag gag gag gaa gtt tct aca gta aat gta cgg cgg cga agt gct aaa | | | | 739 |
| Glu Glu Glu Glu Val Ser Thr Val Asn Val Arg Arg Arg Ser Ala Lys | | | | |
| | 200 | 205 | 210 | |
| agg gaa cgg cga tga acaaatgtaa ttaataactt tctctgtgaa agctttggaa | | | | 794 |
| Arg Glu Arg Arg * | | | | |
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| aaa | | | | 797 |

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| ctgcgcgcgc agatccgccc cggcctcccc gagagcgagc cccggccgcc gcgaccacca | 180 |
| gccgcgctaa ccgccgacca accgccaccg aggcgcctga gcgagagcag aggaggagga | 240 |
| ggc atg agt gag gcg ggc gag gcc acc acc acc acc acc acc acc ctc | 288 |
| Met Ser Glu Ala Gly Glu Ala Thr Thr Thr Thr Thr Thr Thr Leu | |
| 1 5 10 15 | |
| ccg cag gct ccg acg gag gcg gcc gcc gcg gct ccc cag gac ccc gcg | 336 |
| Pro Gln Ala Pro Thr Glu Ala Ala Ala Ala Ala Pro Gln Asp Pro Ala | |
| 20 25 30 | |
| ccc aag agc ccg gtg ggc agc ggt gcg ccc cag gcc gcg gcc ccg gcg | 384 |
| Pro Lys Ser Pro Val Gly Ser Gly Ala Pro Gln Ala Ala Ala Pro Ala | |
| 35 40 45 | |
| ccc gcc gcc cac gtc gca gga aac ccc ggt ggg gac gcg gcc ccc gca | 432 |
| Pro Ala Ala His Val Ala Gly Asn Pro Gly Gly Asp Ala Ala Pro Ala | |
| 50 55 60 | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| gcc | acg | ggc | acc | gcg | gcc | gcc | gcc | tct | tta | gcc | acc | gcc | gcc | ggc | agc | 480 |
| Ala | Thr | Gly | Thr | Ala | Ala | Ala | Ala | Ser | Leu | Ala | Thr | Ala | Ala | Gly | Ser | |
| 65 | | | | | | 70 | | | | | 75 | | | | | |
| gaa | gac | gcg | gag | aaa | aaa | gtt | ctc | gcc | acc | aaa | gtc | ctt | ggc | act | gtc | 528 |
| Glu | Asp | Ala | Glu | Lys | Lys | Val | Leu | Ala | Thr | Lys | Val | Leu | Gly | Thr | Val | |
| 80 | | | | | 85 | | | | | 90 | | | | | 95 | |
| aaa | tgg | ttc | aac | gtc | aga | aat | gga | tat | gga | ttt | ata | aat | cga | aat | gac | 576 |
| Lys | Trp | Phe | Asn | Val | Arg | Asn | Gly | Tyr | Gly | Phe | Ile | Asn | Arg | Asn | Asp | |
| | | | | 100 | | | | | 105 | | | | | 110 | | |
| acc | aaa | gaa | gat | gta | ttt | gta | cat | cag | act | gcc | atc | aag | aag | aat | aac | 624 |
| Thr | Lys | Glu | Asp | Val | Phe | Val | His | Gln | Thr | Ala | Ile | Lys | Lys | Asn | Asn | |
| | | | 115 | | | | | 120 | | | | | 125 | | | |
| cca | cgg | aaa | tat | ctg | cgc | agt | gta | gga | gat | gga | gaa | act | gta | gag | ttt | 672 |
| Pro | Arg | Lys | Tyr | Leu | Arg | Ser | Val | Gly | Asp | Gly | Glu | Thr | Val | Glu | Phe | |
| | | 130 | | | | | 135 | | | | | 140 | | | | |
| gat | gtg | gtt | gaa | gga | gag | aag | ggg | gca | gaa | gct | gcc | aat | gtg | act | ggc | 720 |
| Asp | Val | Val | Glu | Gly | Glu | Lys | Gly | Ala | Glu | Ala | Ala | Asn | Val | Thr | Gly | |
| | 145 | | | | | 150 | | | | | 155 | | | | | |
| cgc | gat | gga | gtt | cct | gtg | gaa | ggg | agt | cgt | tac | gct | gca | gat | cgg | cgc | 768 |
| Pro | Asp | Gly | Val | Pro | Val | Glu | Gly | Ser | Arg | Tyr | Ala | Ala | Asp | Arg | Arg | |
| 160 | | | | | 165 | | | | | 170 | | | | | 175 | |
| cgt | tac | aga | cgt | ggc | tac | tat | gga | agg | cgc | cgt | ggc | cct | ccc | cgg | aat | 816 |
| Arg | Tyr | Arg | Arg | Gly | Tyr | Tyr | Gly | Arg | Arg | Arg | Gly | Pro | Pro | Arg | Asn | |
| | | | | 180 | | | | | 185 | | | | | 190 | | |
| tac | gct | ggg | gag | gag | gag | gag | gaa | ggg | agc | ggc | agc | agt | gaa | gga | ttt | 864 |
| Tyr | Ala | Gly | Glu | Glu | Glu | Glu | Glu | Gly | Ser | Gly | Ser | Ser | Glu | Gly | Phe | |
| | | | 195 | | | | | 200 | | | | | 205 | | | |
| gac | ccc | cct | gcc | act | gat | agg | cag | ttc | tct | ggg | gcc | cgg | aat | cag | ctg | 912 |
| Asp | Pro | Pro | Ala | Thr | Asp | Arg | Gln | Phe | Ser | Gly | Ala | Arg | Asn | Gln | Leu | |
| | | 210 | | | | | 215 | | | | | 220 | | | | |
| cgc | cgc | ccc | cag | tat | cgc | cct | cag | tac | cgg | cag | cgg | cgg | ttc | ccg | cct | 960 |
| Arg | Arg | Pro | Gln | Tyr | Arg | Pro | Gln | Tyr | Arg | Gln | Arg | Arg | Phe | Pro | Pro | |
| | | 225 | | | | 230 | | | | | 235 | | | | | |
| tac | cac | gtg | gga | cag | acc | ttt | gac | cgt | cgc | tca | cgg | gtc | tta | ccc | cat | 1008 |
| Tyr | His | Val | Gly | Gln | Thr | Phe | Asp | Arg | Arg | Ser | Arg | Val | Leu | Pro | His | |
| 240 | | | | | 245 | | | | | 250 | | | | | 255 | |
| ccc | aac | aga | ata | cag | gct | ggg | gag | att | gga | gag | atg | aag | gat | gga | gtc | 1056 |
| Pro | Asn | Arg | Ile | Gln | Ala | Gly | Glu | Ile | Gly | Glu | Met | Lys | Asp | Gly | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | | |
| cca | gag | gga | | | | | | | | | | | | | | |

| | | | | | | | |
|--|-----|-----|----|-------------------------------------|---|-----|------|
| 240 | | 245 | | 250 | | 255 | |
| gtt cgc cgt gga tac cgg cgt ccc tac aat tac cgg cgt cgc ccg cgt | | | | | | | 1056 |
| Val Arg Arg Gly Tyr Arg Arg Pro Tyr Asn Tyr Arg Arg Arg Pro Arg | | | | | | | |
| | 260 | | | 265 | | 270 | |
| cct cct aac gct cct tca caa gat ggc aaa gag gcc aag gca ggt gaa | | | | | | | 1104 |
| Pro Pro Asn Ala Pro Ser Gln Asp Gly Lys Glu Ala Lys Ala Gly Glu | | | | | | | |
| | 275 | | | 280 | | 285 | |
| gca cca act gag aac cct gct cca ccc acc cag cag agc agt gct gag | | | | | | | 1152 |
| Ala Pro Thr Glu Asn Pro Ala Pro Pro Thr Gln Gln Ser Ser Ala Glu | | | | | | | |
| | 290 | | | 295 | | 300 | |
| taa cacc aggtcctca ggcaccttca ccatacggcag gtgacctaaa gaattaatga | | | | | | | 1209 |
| * | | | | | | | |
| ccattcagaa ataaagcaaa aagcaggcca caaccttaac caacaccaaaa gaaacatcca | | | | | | | 1269 |
| agcaataaag tggaagacta accaagattt ggacattgga atgtttactg ttattcttta | | | | | | | 1329 |
| agaaacaact acaaaaagaa aatgtcaaca aattttttcca gcaagctgag aacctggaat | | | | | | | 1389 |
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| ctccccgcgc cgctcgcgca gcc atg tcc gag gag aag ccc aag gag ggt | | | | | | | 110 |
| | | | | Met Ser Glu Glu Lys Pro Lys Glu Gly | | | |
| | | | 1 | | 5 | | |
| gtg aag aca gag aat gac cac atc aac ctg aag gtg gcc ggg cag gac | | | | | | | 158 |
| Val Lys Thr Glu Asn Asp His Ile Asn Leu Lys Val Ala Gly Gln Asp | | | | | | | |
| 10 | | 15 | | 20 | | 25 | |
| ggc tcc gtg gtg cag ttc aag atc aag agg cac acg ccg ctg agc aag | | | | | | | 206 |
| Gly Ser Val Val Gln Phe Lys Ile Lys Arg His Thr Pro Leu Ser Lys | | | | | | | |
| | 30 | | 35 | | | 40 | |
| ctg atg aag gcc tac tgc gag agg cag ggc ttg tca atg agg cag atc | | | | | | | 254 |
| Leu Met Lys Ala Tyr Cys Glu Arg Gln Gly Leu Ser Met Arg Gln Ile | | | | | | | |
| | 45 | | 50 | | | 55 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 55 | | | | | 60 | | | | | 65 | | | | | | | |
| cgc | tgt | gcc | ggg | gac | tgg | ctg | ccg | cga | ggc | ctg | ggc | tgg | ggc | ggc | cgc | 294 | |
| Arg | Cys | Ala | Gly | Asp | Trp | Leu | Pro | Arg | Gly | Leu | Gly | Trp | Gly | Gly | Arg | | |
| 70 | | | | | 75 | | | | | 80 | | | | | | | |
| ggc | gcc | gcc | gtc | tgc | gcc | tac | gtg | cgc | atg | gtt | ttc | ctg | gcg | ctc | tac | 342 | |
| Gly | Ala | Ala | Val | Cys | Ala | Tyr | Val | Arg | Met | Val | Phe | Leu | Ala | Leu | Tyr | | |
| 85 | | | | | 90 | | | | | 95 | | | | | 100 | | |
| gtg | ctg | ttc | ctc | gcc | gac | gag | gag | ttc | gac | gtg | gta | gtg | tgc | gac | cag | 390 | |
| Val | Leu | Phe | Leu | Ala | Asp | Glu | Glu | Phe | Asp | Val | Val | Val | Cys | Asp | Gln | | |
| 105 | | | | | 110 | | | | | 115 | | | | | | | |
| gtg | tct | gcc | tgt | atc | cca | gtg | ttc | agg | ctg | gct | aga | cgg | cgg | aag | aag | 438 | |
| Val | Ser | Ala | Cys | Ile | Pro | Val | Phe | Arg | Leu | Ala | Arg | Arg | Arg | Lys | Lys | | |
| 120 | | | | | 125 | | | | | 130 | | | | | | | |
| atc | cta | ttt | tac | tgt | cac | ttc | cca | gat | ctg | ctt | ctc | acc | aag | aga | gat | 486 | |
| Ile | Leu | Phe | Tyr | Cys | His | Phe | Pro | Asp | Leu | Leu | Leu | Thr | Lys | Arg | Asp | | |
| 135 | | | | | 140 | | | | | 145 | | | | | | | |
| tct | ttt | ctt | aaa | cga | cta | tac | agg | gcc | cca | att | gac | tgg | ata | gag | gaa | 534 | |
| Ser | Phe | Leu | Lys | Arg | Leu | Tyr | Arg | Ala | Pro | Ile | Asp | Trp | Ile | Glu | Glu | | |
| 150 | | | | | 155 | | | | | 160 | | | | | | | |
| tac | acc | aca | ggc | atg | gca | gac | tgc | atc | tta | gtc | aac | agc | cag | ttc | aca | 582 | |
| Tyr | Thr | Thr | Gly | Met | Ala | Asp | Cys | Ile | Leu | Val | Asn | Ser | Gln | Phe | Thr | | |
| 165 | | | | | 170 | | | | | 175 | | | | | 180 | | |
| gct | gct | gtt | ttt | aag | gaa | aca | ttc | aag | tcc | ctg | tct | cac | ata | gac | cct | 630 | |
| Ala | Ala | Val | Phe | Lys | Glu | Thr | Phe | Lys | Ser | Leu | Ser | His | Ile | Asp | Pro | | |
| 185 | | | | | 190 | | | | | 195 | | | | | | | |
| gat | gtc | ctc | tat | cca | tct | cta | aat | gtc | acc | agc | ttt | gac | tca | gtt | gtt | 678 | |
| Asp | Val | Leu | Tyr | Pro | Ser | Leu | Asn | Val | Thr | Ser | Phe | Asp | Ser | Val | Val | | |
| 200 | | | | | 205 | | | | | 210 | | | | | | | |
| cct | gaa | aag | ctg | gat | gac | cta | gtc | ccc | aag | ggg | aaa | aaa | ttc | ctg | ctg | 726 | |
| Pro | Glu | Lys | Leu | Asp | Asp | Leu | Val | Pro | Lys | Gly | Lys | Lys | Phe | Leu | Leu | | |
| 215 | | | | | 220 | | | | | 225 | | | | | | | |
| ctc | tcc | atc | aac | aga | tac | gaa | agg | aag | aaa | aat | ctg | act | ttg | gca | ctg | 774 | |
| Leu | Ser | Ile | Asn | Arg | Tyr | Glu | Arg | Lys | Lys | Asn | Leu | Thr | Leu | Ala | Leu | | |
| 230 | | | | | 235 | | | | | 240 | | | | | | | |
| gaa | gcc | cta | gta | cag | ctg | cgt | gga | aga | ttg | aca | tcc | caa | gat | tgg | gag | 822 | |
| Glu | Ala | Leu | Val | Gln | Leu | Arg | Gly | Arg | Leu | Thr | Ser | Gln | Asp | Trp | Glu | | |
| 245 | | | | | 250 | | | | | 255 | | | | | 260 | | |
| agg | gtt | cat | ctg | atc | gtg | gca | ggg | ggg | tat | gac | gag | aga | gtc | ctg | gag | 870 | |
| Arg | Val | His | Leu | Ile | Val | Ala | Gly | Gly | Tyr | Asp | Glu | Arg | Val | Leu | Glu | | |
| 265 | | | | | 270 | | | | | 275 | | | | | | | |
| aat | gtg | gaa | cat | tat | cag | gaa | ttg | aag | aaa | atg | gtc | caa | cag | tcc | gac | 918 | |
| Asn | Val | Glu | His | Tyr | Gln | Glu | Leu | Lys | Lys | Met | Val | Gln | Gln | Ser | Asp | | |
| 280 | | | | | 285 | | | | | 290 | | | | | | | |

| | | | | | | |
|---|------------|------------|-------------|-----------------------------|------------|------|
| gttgatattt | tttctaacaa | tttttttttt | ctcttccaca | aagggtagta | caaagttagg | 120 |
| ggtgtgctca | gctttctatg | taacctaata | tggggaaagc | tgacctcgga | agggggtaag | 180 |
| atcaatctcc | tctacgcctt | tgccatggta | cccagtgcca | accactccac | attaatcagc | 240 |
| catgtgctgt | tccaggggtc | actgtcattc | ggggacgtgg | ctgtggggctt | cacccggaaa | 300 |
| gagtggcagc | agctggacct | ggagcaaagg | accctgtacc | aggatgtgat | gctggagaac | 360 |
| tacagccacc | tgctctctgt | gggctgaact | gtctgcttgc | ttggaaggcc | cagctggctc | 420 |
| agcacaaatc | ctttgaccgt | ttctccccaa | gaggggtgtca | agtcagcaaa | ccagctgtga | 480 |
| tctccagttt | ggagcagggg | aaggagccat | gg | atg gag gag gaa gag ata agg | | 533 |
| | | | | Met Glu Glu Glu Glu Ile Arg | | |
| | | | | 1 | 5 | |
| acg tgg agc ttc cca gga gcg aat cca cgc gga ggt cac cag tgt gga | | | | | | 581 |
| Thr Trp Ser Phe Pro Gly Ala Asn Pro Arg Gly Gly His Gln Cys Gly | 10 | 15 | 20 | | | |
| agt gct tta agc tgt gac gag gga gtt cct gca gct cag gga gcc agt | | | | | | 629 |
| Ser Ala Leu Ser Cys Asp Glu Gly Val Pro Ala Ala Gln Gly Ala Ser | 25 | 30 | 35 | | | |
| agt gag aaa ccc cac gaa tgc acg aag tgt ggg aaa gcc ttg tgc tgc | | | | | | 677 |
| Ser Glu Lys Pro His Glu Cys Thr Lys Cys Gly Lys Ala Leu Cys Cys | 40 | 45 | 50 | 55 | | |
| aga tcg gac ctc agg gta cat cac ggg gtc cac gcg ggg gag aag tcc | | | | | | 725 |
| Arg Ser Asp Leu Arg Val His His Gly Val His Ala Gly Glu Lys Ser | 60 | 65 | 70 | | | |
| tct gcg tgc agt gaa cgg ggg agt ggt ttc agg gag aag ctt tgc cct | | | | | | 773 |
| Ser Ala Cys Ser Glu Arg Gly Ser Gly Phe Arg Glu Lys Leu Cys Pro | 75 | 80 | 85 | | | |
| gac aaa cag gga act cac aca aag gag aaa ccc gct aga gac agc aga | | | | | | 821 |
| Asp Lys Gln Gly Thr His Thr Lys Glu Lys Pro Ala Arg Asp Ser Arg | 90 | 95 | 100 | | | |
| agt ggt aaa acg atc ttc cgg aag aca cgc ctg tgt gtc ccg ggc aca | | | | | | 869 |
| Ser Gly Lys Thr Ile Phe Arg Lys Thr Arg Leu Cys Val Pro Gly Thr | 105 | 110 | 115 | | | |
| gtt cac gcc gga gcg aag cct tac aag tgt tgg gag tgt gag aaa acc | | | | | | 917 |
| Val His Ala Gly Ala Lys Pro Tyr Lys Cys Trp Glu Cys Glu Lys Thr | 120 | 125 | 130 | 135 | | |
| tcc cac aag tcg cgc ctc atc gag cac ctt cgc tcc cac acg ggg gag | | | | | | 965 |
| Ser His Lys Ser Arg Leu Ile Glu His Leu Arg Ser His Thr Gly Glu | 140 | 145 | 150 | | | |
| aag ccc tgc ggc tgc agg gaa tgc gga aag gcc ttt ttc cag aag tca | | | | | | 1013 |
| Lys Pro Cys Gly Cys Arg Glu Cys Gly Lys Ala Phe Phe Gln Lys Ser | | | | | | |

| | | | |
|---------------------------------|---------------------------------|-----|------|
| 155 | 160 | 165 | |
| cac ctc atc ctg cgt cag agg act | cac acg ggg gag aag ccc tgc gac | | 1061 |
| His Leu Ile Leu Arg Gln Arg Thr | His Thr Gly Glu Lys Pro Cys Asp | | |
| 170 | 175 | 180 | |
| tgc gcg gag tgc ggg aaa gct gct | ccc agg act cct gcc tcc tga | | 1106 |
| Cys Ala Glu Cys Gly Lys Ala Ala | Pro Arg Thr Pro Ala Ser * | | |
| 185 | 190 | 195 | |

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 cgtggcaatg cccgcgcaga cgatctggta cgcaataacg gctatgccgc caacgccatc 180
 cagctgcacg aggatcatat cgtcgggtct tttttccggc tcagtcacgc cccaagctgg 240
 cgctatcttg gcatcgggga ggaagaagcc cgtgcctttt cccgcgaggt tgaagcggca 300
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 gccacctggg ataccagttc gtcgcggctt ttccggacac agttccggat ggtcagcccg 480
 aagcgcacga gcaacccgaa caataccggc gacagccgga actgccgtgc cgggtgtgcag 540
 attaatgaca gcggtgcggc gctgggatat tacgtcagcg aggacgggta tcctggctat 600
 atgccgcaga aatggacatg gatacccccgt gagttaccgc gcgggcgcgc ctctttcatt 660
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| Pro | Ala | | Leu | Arg | Ala | Phe | Pro | Asp | Leu | Lys | Glu | Arg | Leu | Arg | Lys | |
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| Gln | Leu | Val | Ala | Gly | Asp | Ile | Val | Leu | Asp | Lys | Leu | Gly | Glu | Arg | Leu | |
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| Lys | Tyr | Leu | Leu | Ser | Ser | Ile | Gln | Trp | Gly | Asp | Leu | Ala | Asn | Ile | Gln | |
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| Cys | Gln | Asn | Cys | Phe | Pro | Leu | Asn | Trp | Thr | Trp | Tyr | Ser | Ser | Asn | Gly | | |
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| | | 200 | | | | | 205 | | | | | 210 | | | | | |
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| Lys | Pro | Phe | Leu | Val | Ile | Val | Ala | Glu | Val | Ile | Leu | Leu | Val | Ala | Thr | | |
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| Ile | Leu | Leu | Cys | Glu | Lys | Tyr | Thr | Gln | Lys | Lys | Lys | Lys | His | Ser | Asp | | |
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| Gly | Gln | * | | | | | | | | | | | | | | | |
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 Phe Leu Gly Val Asn Ile Leu His Leu Ser Tyr Leu Leu Tyr Lys Lys
 100 105 110 115

aga ccg gta aag att gaa aag gaa ctc agt ggc atg tac cgg cga ttg 499
 Arg Pro Val Lys Ile Glu Lys Glu Leu Ser Gly Met Tyr Arg Arg Leu
 120 125 130

ttt gaa cca ctc cgt gtg cct cca gat ttg ttc aga aga cta act gga 547
 Phe Glu Pro Leu Arg Val Pro Pro Asp Leu Phe Arg Arg Leu Thr Gly
 135 140 145

cag ttt tgc atg atc caa acc ttg aaa aag ggc caa act tat gct gca 595
 Gln Phe Cys Met Ile Gln Thr Leu Lys Lys Gly Gln Thr Tyr Ala Ala
 150 155 160

006454.03400

| | | | | | | | | | | | | | | | | |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|
| gag Glu | gat Asp 165 | aaa Lys | acc Thr | tca Ser | gtt Val | gat Asp 170 | gac Asp | cgt Arg | ctg Leu | agt Ser | att Ile 175 | ctc Leu | ttg Leu | aag Lys | gga Gly | 643 |
| aaa Lys 180 | atg Met | aag Lys | gtc Val | tcc Ser | tat Tyr 185 | cga Arg | gga Gly | cat His | ttt Phe | ctg Leu 190 | cat His | aac Asn | att Ile | tac Tyr | ccc Pro 195 | 691 |
| tgt Cys | gcc Ala | ttt Phe | ata Ile | gat Asp 200 | tct Ser | cct Pro | gaa Glu | ttt Phe | aga Arg 205 | tca Ser | act Thr | cag Gln | atg Met | cac His | aaa Lys 210 | 739 |
| ggg Gly | gaa Glu | aaa Lys | ttc Phe 215 | cag Gln | gtc Val | acc Thr | att Ile 220 | att Ile | gca Ala | gat Asp | gat Asp | aac Asn | tgc Cys 225 | aga Arg | ttt Phe | 787 |
| tta Leu | tgc Cys | tgg Trp 230 | tca Ser | aga Arg | gaa Glu | aga Arg | tta Leu 235 | aca Thr | tac Tyr | ttt Phe | ctg Leu | gaa Glu 240 | tca Ser | gaa Glu | cct Pro | 835 |
| ttc Phe 245 | ttg Leu | tat Tyr | gaa Glu | atc Ile | ttt Phe | agg Arg 250 | tat Tyr | ctt Leu | att Ile | gga Gly 255 | aaa Lys | gac Asp | atc Ile | aca Thr | aat Asn | 883 |
| aag Lys 260 | ctc Leu | tac Tyr | tca Ser | ttg Leu | aat Asn 265 | gat Asp | ccc Pro | acc Thr | tta Leu | aat Asn 270 | gat Asp | aaa Lys | aaa Lys | gcc Ala | aaa Lys 275 | 931 |
| aag Lys | ctg Leu | gaa Glu | cat His | cag Gln 280 | ctc Leu | agc Ser | ctc Leu | tgc Cys | aca Thr 285 | cag Gln | atc Ile | tcc Ser | atg Met | ttg Leu 290 | gaa Glu | 979 |
| atg Met | agg Arg | aac Asn | agt Ser | ata Ile | gcc Ala | agc Ser | tcc Ser | agt Ser | gac Asp 300 | agt Ser | gac Asp | gac Asp | ggc Gly 305 | ttg Leu | cac His | 1027 |
| cag Gln | ttt Phe 310 | ctt Leu | cgg Arg | ggg Gly | acc Thr | tcc Ser | agc Ser 315 | atg Met | tcc Ser | tct Ser | ctt Leu | cat His 320 | gtg Val | tca Ser | tcc Ser | 1075 |
| cca Pro 325 | cac His | cag Gln | cga Arg | gcc Ala | tct Ser | gcc Ala 330 | aag Lys | atg Met | aaa Lys | ccg Pro 335 | ata Ile | gaa Glu | gaa Glu | gga Gly | gca Ala | 1123 |
| gaa Glu 340 | gat Asp | gat Asp | gat Asp | gac Asp | gtt Val 345 | ttt Phe | gaa Glu | ccg Pro | gca Ala | tct Ser 350 | cca Pro | aat Asn | aca Thr | ttg Leu | aaa Lys 355 | 1171 |
| gtc Val | cat His | cag Gln | ctg Leu | cct Pro | tga * | tcagag | agagaattca | ggttaccaag | acggaaggtg | 1225 | | | | | | |
| tcttgaagag | atcctgaaaa | ataccagcac | tttttcatgg | cttttagggtt | attctgcttt | 1285 | | | | | | | | | | |
| agtgcattcca | gactggtaga | gtcggaggga | ggaagtgagg | aaggggtcaag | gatggaagag | 1345 | | | | | | | | | | |
| ttottttcaact | tacctttttt | attagtcagc | ttttaagta | attgtttttac | tgaaaaaaaaa | 1405 | | | | | | | | | | |

1412

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[illegible]

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| 125 130 135 | |
| aca ggt tgg aaa gag cag gtt gtg aat gga gat gtt ggg gct gtt tca Thr Gly Trp Lys Glu Gln Val Val Asn Gly Asp Val Gly Ala Val Ser | 783 |
| 140 145 150 | |
| gag cct ccc tgc ctc ccc aag gaa ccg gca ccc cca agc cca gag tcc Glu Pro Pro Cys Leu Pro Lys Glu Pro Ala Pro Pro Ser Pro Glu Ser | 831 |
| 155 160 165 | |
| cat tca ccc agg gac ctg gac tcc gag gtt ttc tgt gat tcc ctg gag His Ser Pro Arg Asp Leu Asp Ser Glu Val Phe Cys Asp Ser Leu Glu | 879 |
| 170 175 180 185 | |
| cag ctg gag cct gag ctg gtt tgg aca gag cag cgg gca gca tct gga Gln Leu Glu Pro Glu Leu Val Trp Thr Glu Gln Arg Ala Ala Ser Gly | 927 |
| 190 195 200 | |
| gga aag cgt gat ccc agg aac agc ccc gtg ccc ccc aca aag aaa gag Gly Lys Arg Asp Pro Arg Asn Ser Pro Val Pro Pro Thr Lys Lys Glu | 975 |
| 205 210 215 | |
| ggg ttg cgg ggc agc ccg ccg ggg ccc cag gag ttg gac gtg tgg ctg Gly Leu Arg Gly Ser Pro Pro Gly Pro Gln Glu Leu Asp Val Trp Leu | 1023 |
| 220 225 230 | |
| ctg ggg aca gtt cga gca cta cag gag agc atg cag gag gtg cag gcg Leu Gly Thr Val Arg Ala Leu Gln Glu Ser Met Gln Glu Val Gln Ala | 1071 |
| 235 240 245 | |
| agg gtg cag agc ctg gag agc atg ccc ccg ccc cct gag cag agg ccg Arg Val Gln Ser Leu Glu Ser Met Pro Arg Pro Pro Glu Gln Arg Pro | 1119 |
| 250 255 260 265 | |
| cag ccc agg ccc agt gct ccg cca tgg ccc ctt ggg ctc ccg ggg ccc Gln Pro Arg Pro Ser Ala Arg Pro Trp Pro Leu Gly Leu Pro Gly Pro | 1167 |
| 270 275 280 | |
| gcg ctg ctc ttc ttc ctc ctg tgg ccc ttc gtc gtc cag tgg ctc ttc Ala Leu Leu Phe Phe Leu Leu Trp Pro Phe Val Val Gln Trp Leu Phe | 1215 |
| 285 290 295 | |
| cga atg ttt cgg acc caa aag agg tga ctgtc agtggagggg tctctgcagc Arg Met Phe Arg Thr Gln Lys Arg * | 1267 |
| 300 305 | |
| caactgagac tatcttgctg tgccctgagc cttcctaggg tttagaagaa cagcattcaa | 1327 |
| aattccccgt cctgtcagtg tttagccttcg cacctcctcc cctaaagcag cgcggggggc | 1387 |
| aaataagacc ccaccctccc ctgcagcttc acagggacgc ttccttcctt ccccgcaacc | 1447 |
| accccaggct cccctggggag gctgcagttg tggtacacgt ccccggtgct gggtttggccg | 1507 |

tgactcgggg gcggggcat cgggtctcag cccctgcctt cccagtcctc tgggtcaccc 1567
gaattttccc acccctgctt ctccccgagg aggttgagct cttgagcaag ttgggacttg 1627
ggccgggggcc tggaagaatg attggctggg aggcgcggg agggaggcca ggaggcccg 1687
accagttggg aggagtgagc agggcccggg ggagggggat gagcgcagtt tgctcgcttt 1747
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tggctgacgg tgtgaccttg ggtcttaacc atg aac ttc tct gga gga ggg 171
Met Asn Phe Ser Gly Gly Gly
1 5
agg cag gaa gca gca ggg tcc agg ggt aga agg gct ccc aga ccc cga 219
Arg Gln Glu Ala Ala Gly Ser Arg Gly Arg Arg Ala Pro Arg Pro Arg
10 15 20
gaa cag gac cga gac gtg cag ctg tcc aag gct ctg tcc tat gcc ctg 267
Glu Gln Asp Arg Asp Val Gln Leu Ser Lys Ala Leu Ser Tyr Ala Leu
25 30 35
cgc cat ggg gcc ttg aag ctg ggg ctt ccc atg gga gct gat ggc ttc 315
Arg His Gly Ala Leu Lys Leu Gly Leu Pro Met Gly Ala Asp Gly Phe
40 45 50 55
gtg ccc ctg ggc acc ctg ctg cag ttg ccc cag ttc cgc ggc ttc tct 363
Val Pro Leu Gly Thr Leu Leu Gln Leu Pro Gln Phe Arg Gly Phe Ser
60 65 70
gct gaa gat gtg cag cgc gtg gtg gac acc aat agg aag cag cgg ttc 411
Ala Glu Asp Val Gln Arg Val Val Asp Thr Asn Arg Lys Gln Arg Phe
75 80 85
gcc ctg cag ctg ggg gat ccc agc act ggc ctt ctg atc cgg gcc aac 459
Ala Leu Gln Leu Gly Asp Pro Ser Thr Gly Leu Leu Ile Arg Ala Asn
90 95 100

006T60T49560

| | |
|---|-----|
| cag ggc cat tcc ctg cag gta cct aag ttg gag ctg atg ccc ctg gag Gln Gly His Ser Leu Gln Val Pro Lys Leu Glu Leu Met Pro Leu Glu 105 110 115 | 507 |
| aca ccg cag gcc ctg ccc ccg atg cta gtc cat ggt aca ttc tgg aag Thr Pro Gln Ala Leu Pro Pro Met Leu Val His Gly Thr Phe Trp Lys 120 125 130 135 | 555 |
| cac tgg cca tcc atc cta ctc aaa ggc ctg tcc tgc cag gga agg acg His Trp Pro Ser Ile Leu Leu Lys Gly Leu Ser Cys Gln Gly Arg Thr 140 145 150 | 603 |
| cac att cac ctg gcc cca gga ctg cct gga gac ccc ggt atc atc agt His Ile His Leu Ala Pro Gly Leu Pro Gly Asp Pro Gly Ile Ile Ser 155 160 165 | 651 |
| ggc atg cgg tcc cat tgt gaa ata gct gtg ttc atc gat gga ccc ctg Gly Met Arg Ser His Cys Glu Ile Ala Val Phe Ile Asp Gly Pro Leu 170 175 180 | 699 |
| gct ctg gca gat gga ata ccc ttc ttc cgc tct gcc aat ggg gtg att Ala Leu Ala Asp Gly Ile Pro Phe Phe Arg Ser Ala Asn Gly Val Ile 185 190 195 | 747 |
| ctg act cca ggg aat act gat ggc ttc ctc ctt ccc aag tac ttc aag Leu Thr Pro Gly Asn Thr Asp Gly Phe Leu Leu Pro Lys Tyr Phe Lys 200 205 210 215 | 795 |
| gag gcc ctg cag cta cgc cct acc cga aag ccc ctt tcc ttg gct ggt Glu Ala Leu Gln Leu Arg Pro Thr Arg Lys Pro Leu Ser Leu Ala Gly 220 225 230 | 843 |
| gat gaa gag aca gag tgt cag agt agc ccc aag cac agc tcc aga gaa Asp Glu Glu Thr Glu Cys Gln Ser Ser Pro Lys His Ser Ser Arg Glu 235 240 245 | 891 |
| agg agg agg atc caa caa taa aa tattaattta taaaaaagaa attttaaaaa Arg Arg Arg Ile Gln Gln * | 944 |
| 250 | |
| gtaacaagaa agaactcgtt tgaaaccatg tttcatcaaa aaaaaaaaaa aaa | 997 |

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| ccacgcgctc | cggtgagaa | ggctacatgt | gacgagaatg | attctgtttc | aaatatagcc | 120 |
| acagaaataa | aggagggaca | acaatctggg | acagtgtctc | ctcagaaaca | atcggcccag | 180 |
| aaggttatat | ttaaaaagaa | agtttctctt | ttgaatat | tgccacaagaat | a atg ggc Met Gly 1 | 237 |
| ggg ggg aaa tct gga aca gtg tct tct cag aaa caa cca gcc tca aag | | | | | | 285 |
| Gly Gly Lys Ser Gly Thr Val Ser Ser Gln Lys Gln Pro Ala Ser Lys | 5 | 10 | 15 | | | |
| act gca agt gac aag aca gat tct gct ttg aat aca gct aca gaa ata | | | | | | 333 |
| Thr Ala Ser Asp Lys Thr Asp Ser Ala Leu Asn Thr Ala Thr Glu Ile | 20 | 25 | 30 | | | |
| aag gat gga cta caa tgt ggg aca gtg tct tct cag aaa caa caa gcc | | | | | | 381 |
| Lys Asp Gly Leu Gln Cys Gly Thr Val Ser Ser Gln Lys Gln Gln Ala | 35 | 40 | 45 | 50 | | |
| ttg aag gct aca act gac gag gaa ggt tct gtt tct aat ata gcc aca | | | | | | 429 |
| Leu Lys Ala Thr Thr Asp Glu Glu Gly Ser Val Ser Asn Ile Ala Thr | 55 | 60 | 65 | | | |
| gaa ata aag gat gga gaa aaa tct ggg aca gtg tct tct cag aaa aaa | | | | | | 477 |
| Glu Ile Lys Asp Gly Glu Lys Ser Gly Thr Val Ser Ser Gln Lys Lys | 70 | 75 | 80 | | | |
| cca gcc ttg aag gcc aca agt gat gag aaa gat tct ttt tcg aat ata | | | | | | 525 |
| Pro Ala Leu Lys Ala Thr Ser Asp Glu Lys Asp Ser Phe Ser Asn Ile | 85 | 90 | 95 | | | |
| acc aga gaa aaa aag gat gga gaa ata tct agg aca gtg tct tct cag | | | | | | 573 |
| Thr Arg Glu Lys Lys Asp Gly Glu Ile Ser Arg Thr Val Ser Ser Gln | 100 | 105 | 110 | | | |
| aaa cca cca gcc ttg aag gct aca agt gtc aag gaa gat tct gtt ttg | | | | | | 621 |
| Lys Pro Pro Ala Leu Lys Ala Thr Ser Val Lys Glu Asp Ser Val Leu | 115 | 120 | 125 | 130 | | |
| aat ata gcc aga gaa aaa aag gat gga gaa aaa tct agg aca gtg tct | | | | | | 669 |
| Asn Ile Ala Arg Glu Lys Lys Asp Gly Glu Lys Ser Arg Thr Val Ser | 135 | 140 | 145 | | | |
| ttt gac caa cca cca ggc ttg aag gct aca aga gac gag aaa gat tct | | | | | | 717 |
| Phe Asp Gln Pro Pro Gly Leu Lys Ala Thr Arg Asp Glu Lys Asp Ser | 150 | 155 | 160 | | | |
| ctt ttg aat ata gcc aga gga aaa gag gat gga gaa aaa act agg aga | | | | | | 765 |
| Leu Leu Asn Ile Ala Arg Gly Lys Glu Asp Gly Glu Lys Thr Arg Arg | 165 | 170 | 175 | | | |
| gtg tct tct cgg aaa aaa cca gcc ttg aag gct aca agt gat gag aaa | | | | | | 813 |
| Val Ser Ser Arg Lys Lys Pro Ala Leu Lys Ala Thr Ser Asp Glu Lys | 180 | 185 | 190 | | | |
| gat tct ttt tcg aat ata acc aga gaa aaa aag gat gga gaa aca tct | | | | | | 861 |

Asp Ser Phe Ser Asn Ile Thr Arg Glu Lys Lys Asp Gly Glu Thr Ser
 195 200 205 210

agg aca gtg tct tct cag aaa cca cca gcc ttg aag gct aca agt gac 909
 Arg Thr Val Ser Ser Gln Lys Pro Pro Ala Leu Lys Ala Thr Ser Asp
 215 220 225

gag gaa gat tct gtt ttg agt ata gcc aga gaa gaa aag gat gga gaa 957
 Glu Glu Asp Ser Val Leu Ser Ile Ala Arg Glu Glu Lys Asp Gly Glu
 230 235 240

aaa tct agg aca gtg tct tct gag caa cca cca ggc ttg aag tgt ctt 1005
 Lys Ser Arg Thr Val Ser Ser Glu Gln Pro Pro Gly Leu Lys Cys Leu
 245 250 255

ctc gga aaa aag cag cct tga ag gctacaagtg atgagaaaga ttctttttca 1058
 Leu Gly Lys Lys Gln Pro *
 260 265

aatataacca gagaaagaaa ggaaggagaa acatctagga cagtgtcttc tcagaaacca 1118

ccagccttga aggctacaag 1138

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 ccgcgggatc caggaggagc caactgcgcc ggaggagggg ttctggccga cagtcggga 180
 ttggcggctg cagccagggg tcttcgacg ctgggcttcc gtgagcggcg ctctgccaga 240
 tctctggacc ggattcgtcc cattctcgtc ctc atg gtg gac aag aaa ctg gtg 294
 Met Val Asp Lys Lys Leu Val
 1 5

gtg gtt ttc gga ggc aca ggt gcc cag ggt ggc tcc gtg gcc cgc aca 342
 Val Val Phe Gly Gly Thr Gly Ala Gln Gly Gly Ser Val Ala Arg Thr
 10 15 20

ctc ctg gaa gat ggg aca ttc aag gtt cga gtg gtg acc cga aac cct 390
 Leu Leu Glu Asp Gly Thr Phe Lys Val Arg Val Val Thr Arg Asn Pro
 25 30 35

agg aag aag gca gca aag gag ctg agg ctg caa ggt gca gaa gta gtg 438

00544-004500

| | | | | | | | | | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------|-----|
| Arg 40 | Lys | Lys | Ala | Ala | Lys | Glu | Leu | Arg | Leu | Gln | Gly | Ala | Glu | Val | Val | | |
| 45 | | | | | | | | | | | | | | | | 50 | 55 |
| cag Gln | gga Gly | gac Asp | caa Gln | gat Asp | gac Asp | cag Gln | gtc Val | atc Ile | atg Met | gag Glu | ctg Leu | gcc Ala | ctg Leu | aat Asn | ggg Gly | 486 | |
| 60 | | | | | | | | | | | | | | | | 65 | 70 |
| gct Ala | tac Tyr | gcc Ala | acc Thr | ttc Phe | atc Ile | gtg Val | acc Thr | aat Asn | tac Tyr | tgg Trp | gag Glu | agc Ser | tgc Cys | agc Ser | cag Gln | 534 | |
| 75 | | | | | | | | | | | | | | | | 80 | 85 |
| gag Glu | cag Gln | gag Glu | gtc Val | aag Lys | cag Gln | ggg Gly | aag Lys | ctg Leu | ctc Leu | gct Ala | gat Asp | ctg Leu | gcc Ala | agg Arg | cgc Arg | 582 | |
| 90 | | | | | | | | | | | | | | | | 95 | 100 |
| ctg Leu | ggc Gly | ctc Leu | cac His | tat Tyr | gtg Val | gtc Val | tac Tyr | agc Ser | ggc Gly | ctg Leu | gag Glu | aac Asn | atc Ile | aag Lys | aag Lys | 630 | |
| 105 | | | | | | | | | | | | | | | | 110 | 115 |
| ctg Leu | acg Thr | gca Ala | ggg Gly | aga Arg | ttg Leu | gcc Ala | gcc Ala | gcg Ala | cac His | ttt Phe | gac Asp | ggc Gly | aaa Lys | ggg Gly | gag Glu | 678 | |
| 120 | | | | | | | | | | | | | | | | 125 | 130 |
| gtg Val | gag Glu | gaa Glu | tat Tyr | ttc Phe | cgg Arg | gac Asp | att Ile | ggc Gly | gtt Val | ccc Pro | atg Met | acc Thr | agt Ser | gtg Val | cgg Arg | 726 | |
| 140 | | | | | | | | | | | | | | | | 145 | 150 |
| ctg Leu | ccc Pro | tgc Cys | tat Tyr | ttt Phe | gag Glu | aac Asn | ctc Leu | ctc Leu | tcc Ser | cac His | ttc Phe | ttg Leu | ccc Pro | cag Gln | aaa Lys | 774 | |
| 155 | | | | | | | | | | | | | | | | 160 | 165 |
| gcc Ala | cca Pro | gac Asp | gga Gly | aag Lys | agc Ser | tac Tyr | ttg Leu | ctg Leu | agc Ser | ttg Leu | ccc Pro | aca Thr | ggg Gly | gac Asp | gtt Val | 822 | |
| 170 | | | | | | | | | | | | | | | | 175 | 180 |
| ccc Pro | atg Met | gat Asp | ggc Gly | atg Met | tcc Ser | gtg Val | tct Ser | gac Asp | ctg Leu | ggg Gly | cct Pro | gtg Val | gtg Val | ctc Leu | agc Ser | 870 | |
| 185 | | | | | | | | | | | | | | | | 190 | 195 |
| ctt Leu | ttg Leu | aag Lys | atg Met | cca Pro | gaa Glu | aaa Lys | tac Tyr | gtc Val | ggc Gly | cag Gln | aac Asn | atc Ile | ggg Gly | ctg Leu | agc Ser | 918 | |
| 200 | | | | | | | | | | | | | | | | 205 | 210 |
| act Thr | tgc Cys | agg Arg | cac His | acg Thr | gcc Ala | gag Glu | gag Glu | tac Tyr | gct Ala | gcc Ala | ctg Leu | ctc Leu | acc Thr | aag Lys | cac His | 966 | |
| 220 | | | | | | | | | | | | | | | | 225 | 230 |
| acc Thr | cgc Arg | aag Lys | gtc Val | gtg Val | cac His | gat Asp | gcc Ala | aag Lys | atg Met | act Thr | cct Pro | gag Glu | gac Asp | tac Tyr | gaa Glu | 1014 | |
| 235 | | | | | | | | | | | | | | | | 240 | 245 |
| aag Lys | ctt Leu | ggc Gly | ttt Phe | ccc Pro | ggg Gly | gcc Ala | cgg Arg | gac Asp | ctg Leu | gcc Ala | aac Asn | atg Met | ttc Phe | cgt Arg | ttc Phe | 1062 | |
| 250 | | | | | | | | | | | | | | | | 255 | 260 |
| tat Tyr | gcc Ala | ctg Leu | aga Arg | ccc Pro | gac Asp | cgt Arg | gac Asp | atc Ile | gag Glu | ctg Leu | acc Thr | ctg Leu | aga Arg | ctc Leu | aac Asn | 1110 | |

| | | | |
|--|-----|-----|------|
| 265 | 270 | 275 | |
| ccc aag gcc ctg acg ctg gac cag tgg ctg gaa cag cac aaa ggg gac | | | 1158 |
| Pro Lys Ala Leu Thr Leu Asp Gln Trp Leu Glu Gln His Lys Gly Asp | | | |
| 280 | 285 | 290 | 295 |
| ttc aac ctg ctg tga cctgccccgcc tcgcggcccc ttgtggggat cgggggcacc | | | 1213 |
| Phe Asn Leu Leu * | | | |
| 300 | | | |
| agaggggcag aggcaccaac atctgaataa agccattggt ctcccaaaaa aaaaaaa | | | 1270 |

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| aaaaaatggt ctttaaaact atgaagtggg taatgggatt aaagtattca aggaatgaga | 120 |
| tggaaatcct ggtaatgggt agaaacatag gtaaattctc ctttcccact taccaccaac | 180 |
| ctgtgtgaac aacaatcatt tctcattaat agtcaagaat gtgaagagat catgagtana | 240 |
| aagtcttgat cagaaattgt gtatagctgt gtccagcata aaaccttata taaaatgcat | 300 |
| atcatagaa gatgctcaag tatgtcatga aaaatatgaa gtttatttaa atatttatcc | 360 |
| aaattaaaga tttnctgtat tctctaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaagcct | 420 |
| cgtgccgaat tcggcacgag ggctgtcgcc acc atg gct ccg cac cgc ccc gcg | 474 |
| Met Ala Pro His Arg Pro Ala | |
| 1 5 | |

| | |
|---|-----|
| ccc gcg ctg ctt tgc gcg ctg tcc ctg gcg ctg tgc gcg ctg tcg ctg | 522 |
| Pro Ala Leu Leu Cys Ala Leu Ser Leu Ala Leu Cys Ala Leu Ser Leu | |
| 10 15 20 | |

| | |
|---|-----|
| ccc gtc cgc gcg gcc act gcg tcg cgg ggg gcg tcc cag gcg ggg gcg | 570 |
| Pro Val Arg Ala Ala Thr Ala Ser Arg Gly Ala Ser Gln Ala Gly Ala | |
| 25 30 35 | |

| | |
|---|-----|
| ccc cag ggg cgg gtg ccc gag gcg cgg ccc aac agc atg gtg gtg gaa | 618 |
|---|-----|

| | |
|---|------|
| Pro Gln Gly Arg Val Pro Glu Ala Arg Pro Asn Ser Met Val Val Glu | |
| 40 45 50 55 | |
| cac ccc gag ttc ctc aag gca ggg aag gag cct ggc ctg cag atc tgg | 666 |
| His Pro Glu Phe Leu Lys Ala Gly Lys Glu Pro Gly Leu Gln Ile Trp | |
| 60 65 70 | |
| cgt gtg gag aag ttc gat ctg gtg ccc gtg ccc acc aac ctt tat gga | 714 |
| Arg Val Glu Lys Phe Asp Leu Val Pro Val Pro Thr Asn Leu Tyr Gly | |
| 75 80 85 | |
| gac ttc ttc acg ggc gac gcc tac gtc atc ctg aag aca gtg cag ctg | 762 |
| Asp Phe Phe Thr Gly Asp Ala Tyr Val Ile Leu Lys Thr Val Gln Leu | |
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| agg aac gga aat ctg cag tat gac ctc cac tac tgg ctg ggc aat gag | 810 |
| Arg Asn Gly Asn Leu Gln Tyr Asp Leu His Tyr Trp Leu Gly Asn Glu | |
| 105 110 115 | |
| tgc agc cag gat gag agc ggg gcg gcc gcc atc ttt acc gtg cag ctg | 858 |
| Cys Ser Gln Asp Glu Ser Gly Ala Ala Ala Ile Phe Thr Val Gln Leu | |
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| Asp Asp Tyr Leu Asn Gly Arg Ala Val Gln His Arg Glu Val Gln Gly | |
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| Phe Glu Ser Ala Thr Phe Leu Gly Tyr Phe Lys Ser Gly Leu Lys Tyr | |
| 155 160 165 | |
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| Lys Lys Gly Gly Val Ala Ser Gly Phe Lys His Val Val Pro Asn Glu | |
| 170 175 180 | |
| gtg gtg gtg cag aga ctc ttc cag gtc aaa ggg cgg cgt gtg gtc cgt | 1050 |
| Val Val Val Gln Arg Leu Phe Gln Val Lys Gly Arg Arg Val Val Arg | |
| 185 190 195 | |
| gcc acc gag gta cct gtg tcc tgg gag agc ttc aac aat ggc gac tgc | 1098 |
| Ala Thr Glu Val Pro Val Ser Trp Glu Ser Phe Asn Asn Gly Asp Cys | |
| 200 205 210 215 | |
| ttc atc ctg gac ctg ggc aac aac atc cac cag tgg tgt ggt tcc aac | 1146 |
| Phe Ile Leu Asp Leu Gly Asn Asn Ile His Gln Trp Cys Gly Ser Asn | |
| 220 225 230 | |
| agc aat cgg tat gaa aga ctg aag gcc aca cag gtg tcc aag ggc atc | 1194 |
| Ser Asn Arg Tyr Glu Arg Leu Lys Ala Thr Gln Val Ser Lys Gly Ile | |
| 235 240 245 | |
| cgg gac aac gag cgg agt ggc cgg gcc cga gtg cac gtg tct gag gag | 1242 |
| Arg Asp Asn Glu Arg Ser Gly Arg Ala Arg Val His Val Ser Glu Glu | |
| 250 255 260 | |
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| Gly Thr Glu Pro Glu Ala Met Leu Gln Val Leu Gly Pro Lys Pro Ala | |

275

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Lys Leu Ala Lys Leu Tyr Lys Val Ser Asn Gly Ala Gly Thr Met Ser
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Val Ser Leu Val Ala Asp Glu Asn Pro Phe Ala Gln Gly Ala Leu Lys
315 320 325

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Ser Glu Asp Cys Phe Ile Leu Asp His Gly Lys Asp Gly Lys Ile Phe
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Val Trp Lys Gly Lys Gln Ala Asn Thr Glu Glu Arg Lys Ala Ala Leu
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Lys Thr Ala Ser Asp Phe Ile Thr Lys Met Asp Tyr Pro Lys Gln Thr
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Gln Val Ser Val Leu Pro Glu Gly Gly Glu Thr Pro Leu Phe Lys Gln
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Ser Tyr Leu Ser Ser His Ile Ala Asn Val Glu Arg Val Pro Phe Asp
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490 495 500

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| gtc cgc gcc aac agc gct gga gcc acc cgg gct gtt gag gta ttg cct Val Arg Ala Asn Ser Ala Gly Ala Thr Arg Ala Val Glu Val Leu Pro 570 575 580 | 2202 |
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| acg ggg gcc cag gag ctg ctc agg gtg ctg cgg gcc caa cct gtg cag Thr Gly Ala Gln Glu Leu Leu Arg Val Leu Arg Ala Gln Pro Val Gln 620 625 630 | 2346 |
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| Cys Arg Ile Gly Glu Gly Leu Asp | Gln Ala Leu Pro Cys Leu Thr Glu | | |
| 80 | 85 90 | | |
| ctc att ctc acc aat aat agt ctc | gtg gaa ctg ggt gat ctg gac cct | 399 | |
| Leu Ile Leu Thr Asn Asn Ser | Leu Val Glu Leu Gly Asp Leu Asp Pro | | |
| 95 | 100 105 | | |
| ctg gca tct ctc aaa tcg ctg act | tac cta agt atc cta aga aat ccg | 447 | |
| Leu Ala Ser Leu Lys Ser Leu Thr | Tyr Leu Ser Ile Leu Arg Asn Pro | | |
| 110 | 115 120 | | |
| gta acc aat aag aag cat tac aga | ttg tat gtg att tat aaa gtt ccg | 495 | |
| Val Thr Asn Lys Lys His Tyr Arg | Leu Tyr Val Ile Tyr Lys Val Pro | | |
| 125 | 130 135 140 | | |
| caa gtc aga gta ctg gat ttc cag | aaa gtg aaa cta aaa gag cgt cag | 543 | |
| Gln Val Arg Val Leu Asp Phe Gln | Lys Val Lys Leu Lys Glu Arg Gln | | |
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| gaa gca gag aaa atg ttc aag ggc | aaa cgg ggt gca cag ctt gca aag | 591 | |
| Glu Ala Glu Lys Met Phe Lys Gly | Lys Arg Gly Ala Gln Leu Ala Lys | | |
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| Asp Ile Ala Arg Arg Ser Lys Thr | Phe Asn Pro Gly Ala Gly Leu Pro | | |
| 175 | 180 185 | | |
| act gac aaa aag aaa ggt ggg cca | tct cca ggg gat gta gaa gca atc | 687 | |
| Thr Asp Lys Lys Lys Gly Gly Pro | Ser Pro Gly Asp Val Glu Ala Ile | | |
| 190 | 195 200 | | |
| aag aat gcc ata gca aat gct tca | act ctg gct gaa gtg gag agg ctg | 735 | |
| Lys Asn Ala Ile Ala Asn Ala Ser | Thr Leu Ala Glu Val Glu Arg Leu | | |
| 205 | 210 215 220 | | |
| aag ggg ttg ctg cag tct ggt cag | atc cct ggc aga gaa cgc aga tca | 783 | |
| Lys Gly Leu Leu Gln Ser Gly Gln | Ile Pro Gly Arg Glu Arg Arg Ser | | |
| 225 | 230 235 | | |
| ggg ccc act gat gat ggt gaa gaa | gag atg gaa gaa gac aca gtc aca | 831 | |
| Gly Pro Thr Asp Asp Gly Glu Glu | Met Glu Glu Asp Thr Val Thr | | |
| 240 | 245 250 | | |
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| Asn Gly Ser * | | | |
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| attgttgaaa tgcttaagac tgctgctgat | aattttgttaa tataagtttt gaaatctaaa | 1006 | |
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| agcatgtaat | ttttaagttt | tatttttaatg | aattaaata | tttgtaacc | aactttaaag | 1954 |
| tcagtctctgt | gtatacctag | atattagtca | gttggtgcca | gatagaagac | aggttgtggt | 2014 |
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| taagtgggtga | aatcaactag | agggtggttc | tacaagttgt | tcattctagt | tttgtttggt | 2374 |
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| tttattatct | atgttcttct | agattttacc | tgtagttcat | acttcagtca | cccagtgctc | 2494 |
| tattctggca | ttgtctaaat | ctgagcattg | tctaggggga | tcttaaactt | tagtaggaaa | 2554 |
| ccatgagctg | ttaatacagt | ttccattcaa | atattaattt | cagaatgaaa | cataattttt | 2614 |
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| 1 5 10 | |
| ttc cgc agg acc tcc acc ttc gcc ctg acc atc atc gtg ggc gtc atg Phe Arg Arg Thr Ser Thr Phe Ala Leu Thr Ile Ile Val Gly Val Met | 216 |
| 15 20 25 30 | |
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| | | | | | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--|--|--|
| | | | | 80 | | | | 85 | | | | 90 | | | | | | | |
| aac | ttc | ttc | tgt | cag | ggc | aca | cgc | acc | gca | gga | gaa | tca | gat | atg | aag | 459 | | | |
| Asn | Phe | Phe | Cys | Gln | Gly | Thr | Arg | Thr | Ala | Gly | Glu | Ser | Asp | Met | Lys | | | | |
| 95 | | | | 100 | | | | 105 | | | | | | | | | | | |
| att | atc | cgt | gtc | ctc | tgg | tgg | tac | tac | ttc | tcc | aaa | ctc | ata | gaa | ttt | 507 | | | |
| Ile | Ile | Arg | Val | Leu | Trp | Trp | Tyr | Tyr | Phe | Ser | Lys | Leu | Ile | Glu | Phe | | | | |
| 110 | | | | 115 | | | | 120 | | | | | | | | | | | |
| atg | gac | act | ttc | ttc | ttc | atc | ctg | cgc | aag | aac | aac | cac | cag | atc | acg | 555 | | | |
| Met | Asp | Thr | Phe | Phe | Phe | Ile | Leu | Arg | Lys | Asn | Asn | His | Gln | Ile | Thr | | | | |
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| Val | Leu | His | Val | Tyr | His | His | Ala | Ser | Met | Leu | Asn | Ile | Trp | Trp | Phe | | | | |
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| Val | Met | Asn | Trp | Val | Pro | Cys | Gly | His | Ser | Tyr | Phe | Gly | Ala | Thr | Leu | | | | |
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| Asn | Ser | Phe | Ile | His | Val | Leu | Met | Tyr | Ser | Tyr | Tyr | Gly | Leu | Ser | Ser | | | | |
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| Val | Pro | Ser | Met | Arg | Pro | Tyr | Leu | Trp | Trp | Lys | Lys | Tyr | Ile | Thr | Gln | | | | |
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| ggg | cag | ctg | ctt | cag | ttt | gtg | ctg | aca | atc | atc | cag | acc | agc | tgc | ggg | 795 | | | |
| Gly | Gln | Leu | Leu | Gln | Phe | Val | Leu | Thr | Ile | Ile | Gln | Thr | Ser | Cys | Gly | | | | |
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| gtc | atc | tgg | ccg | tgc | aca | ttc | cct | ctt | ggg | tgg | ttg | tat | ttc | cag | att | 843 | | | |
| Val | Ile | Trp | Pro | Cys | Thr | Phe | Pro | Leu | Gly | Trp | Leu | Tyr | Phe | Gln | Ile | | | | |
| | | | | 225 | | | | 230 | | | | 235 | | | | | | | |
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| Gly | Tyr | Met | Ile | Ser | Leu | Ile | Ala | Leu | Phe | Thr | Asn | Phe | Tyr | Ile | Gln | | | | |
| | | | | 240 | | | | 245 | | | | 250 | | | | | | | |
| acc | tac | aac | aag | aaa | ggg | gcc | tcc | cga | agg | aaa | gac | cac | ctg | aag | gac | 939 | | | |
| Thr | Tyr | Asn | Lys | Lys | Gly | Ala | Ser | Arg | Arg | Lys | Asp | His | Leu | Lys | Asp | | | | |
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| His | Gln | Asn | Gly | Ser | Met | Ala | Ala | Val | Asn | Gly | His | Thr | Asn | Ser | Phe | | | | |
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| tca | ccc | ctg | gaa | aac | aat | gtg | aag | cca | agg | aag | ctg | cgg | aag | gat | tga | 1035 | | | |
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